

## 1.1.1.

**Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific outcomes (PSOs) and Course Outcomes (COs) of the Programmes offered by the Institution**

Additional Information:

s.no	Description	Pages
1	List of courses that have relevance to the local, national, regional and global developmental needs in A1&A2	01 to 69
2	Guest lectures arranged to students (5Ys)	70 to 248
3	POs, PSOs and COs of all Programs	249 to 407

# **List of courses that have relevance to the local, national, regional and global developmental needs**

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

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NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

# Dept. of Civil Engineering

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**List of courses that have relevance to the local,  
national, regional and global development  
needs in A1 and A2 Regulation**

**List of courses that have relevance to the local, national, regional and global development needs in A2 Regulation**

<b>Sl.No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Regulation</b>	<b>Introduced in the year</b>
1	A2EHA701	Constitution of India	A2	2019
2	A2CII201	Programming for Problem Solving	A2	2019
3	A2MED201	Computer Aided Engineering Graphics	A2	2019
4	A2EHL001	English-I	A2	2019
5	A2EHL002	English-II (Technical English)	A2	2019
6	A2CEI201	AI Tools, Techniques & Applications	A2	2019
7	A2CET201	Internet of Things (IoT) for Civil Engineers	A2	2019
8	A2CET301	Engineering Mechanics	A2	2019
9	A2CEI301	Fluid Mechanics & Hydraulic Machines	A2	2019
10	A2CET302	Surveying & Geomatics	A2	2019
11	A2CHA703	Environmental Science	A2	2019
12	A2CYT101	Biology for Engineers	A2	2019
13	A2CET202	Design Thinking and Product Innovation	A2	2019
14	A2CET303	Building Planning and Project Management	A2	2019
15	A2CEI303	Materials, Testing and Evaluation	A2	2019
16	A2EHA702	Indian Traditional Knowledge	A2	2019
17	A2CET304	Basic Reinforced Concrete Design	A2	2019
18	A2CET403	Civil Infrastructure for Smart City Development	A2	2019
19	A2CET404	Advanced Surveying	A2	2019
20	A2MST001	Managerial Economics & Financial Analysis	A2	2019
21	A2CEI306	Environmental Engineering	A2	2019
22	A2CET305	Design of Steel Structures	A2	2019
23	A2CET306	Highway Engineering	A2	2019
24	A2CET307	Water Resources Engineering	A2	2019
25	A2CET407	Remote Sensing and GIS	A2	2019
26	A2CET411	Advanced Reinforced Concrete Design	A2	2019
27	A2CET412	Disaster Management	A2	2019
28	A2CET414	Environmental Impact Assessment	A2	2019
29	A2EHT001	Professional Ethics and Human Values	A2	2019
30	A2CET308	Estimation & Costing	A2	2019
31	A2CET309	Foundation Engineering	A2	2019
32	A2CET416	Repair and Rehabilitation of Structures	A2	2019
33	A2CET417	Water Resources System Planning & Management	A2	2019
34	A2CET418	Railways, Airports and Harbours	A2	2019
35	A2CET419	Advanced Environmental Engineering	A2	2019
36	A2CET421	Reinforced Soil Structures	A2	2019

37	A2CET422	Environmental Economics	A2	2019
38	A2CET423	Traffic Engineering and Transport Planning	A2	2019
39	A2CET424	Ground Water Development and Management	A2	2019
40	A2CET427	Building Construction and Services	A2	2019
41	A2CET428	Air pollution Engineering	A2	2019
42	A2CET429	Irrigation Engineering and Hydraulic Structures	A2	2019
43	A2CEP601	Socially Relevant Project	A2	2019
44	A2CET501	Advanced Construction Technology	A2	2019
45	A2CET502	Industrial Waste Treatment	A2	2019
46	A2CET503	Structural Health Monitoring	A2	2019
47	A2CET504	Urban Hydrology	A2	2019
48	A2CET507	Integrated Solid Waste Management	A2	2019
49	A2CET511	Hydropower Engineering	A2	2019
50	A2CET512	Project Planning and Management	A2	2019
51	A2CET514	Road Safety Engineering	A2	2019
52	A2CET515	Solid Waste Management	A2	2019
53	A2CET516	Technology in Rural Development	A2	2019

**List of courses that have relevance to the local, national, regional and global development needs in A1 Regulation**

<b>Sl.No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Regulation</b>	<b>Introduced in the year</b>
1	A1CIT001	Computer Programming	A1	2015
2	A1MED001	Engineering Drawing	A1	2015
3	A1CHT001	Environmental Studies	A1	2015
4	A1EHL001	English Language Practice – I	A1	2015
5	A1EET001	Basic Electrical and Electronics Engineering	A1	2015
6	A1CET002	Applied Mechanics	A1	2015
7	A1EHL002	English Language Practice – II	A1	2015
8	A1CET202	Elements of Surveying	A1	2015
9	A1CET203	Fluid Mechanics	A1	2015
10	A1CET204	Building Materials and Concrete Technology	A1	2015
11	A1MST001	Managerial Economics & Financial Analysis	A1	2015
12	A1CED208	Building Planning & Civil Engineering Drawing	A1	2015
13	A1CET209	Water Resources Engineering	A1	2015
14	A1CET210	Design of Reinforced Concrete Structures	A1	2015
15	A1CET211	Transportation Engineering	A1	2015
16	A1CET213	Environmental Engineering I	A1	2015
17	A1CET214	Design of Steel Structures	A1	2015
18	A1CET215	Advanced Reinforced Concrete Structures	A1	2015
19	A1CET217	Environmental Engineering II	A1	2015
20	A1CET218	Estimation and Contracts	A1	2015
21	A1EHT101	Professional Communication	A1	2015
22	A1EHT102	Business Communication	A1	2015
23	A1PYT105	Electro Magnetic Theory	A1	2015
24	A1CYT106	Instrumental Methods of Analysis	A1	2015
25	A1MAT109	Probability and Statistics	A1	2015
26	A1MAT110	Complex Variables & Statistical Methods	A1	2015
27	A1CET301	Advanced Surveying	A1	2015
28	A1CET302	Advanced Concrete Technology	A1	2015
29	A1CET305	Repair and Rehabilitation of Structures	A1	2015
30	A1CET306	Construction Equipment, and Methods	A1	2015
31	A1CET307	Railways, Harbours and Airports	A1	2015
32	A1CET308	Advanced Water Resources Engineering	A1	2015
33	A1CET311	Pavement analysis and design	A1	2015
34	A1CET312	Building Construction and Services	A1	2015
35	A1CET313	Ground Improvement techniques	A1	2015
36	A1CET314	Introductions to Finite Element Methods	A1	2015
37	A1CET315	Project Planning and Management	A1	2015
38	A1CET316	Urban Transport Planning	A1	2015
39	A1CET318	Hydro power engineering	A1	2015

40	A1CET319	Design and Drawing of Irrigation Structures	A1	2015
41	A1CET320	Environmental Impact Assessment and Management	A1	2015
42	A1CET321	Remote Sensing and GIS	A1	2015
43	A1CET322	Rural Roads	A1	2015
44	A1CET323	Solid Waste Management	A1	2015
45	A1CET403	Road Safety Engineering	A1	2015
46	A1CET404	Traffic Engineering	A1	2015
47	A1CET405	Disaster management	A1	2015
48	A1CET406	Applications of RS & GIS	A1	2015
49	A1EHT507	Entrepreneurship Development	A1	2015
50	A1ACA509	Professional Ethics & IPR	A1	2015
51	A1ACA510	Soft Skills - I	A1	2015
52	A1ACA511	Soft Skills - II	A1	2015
53	A1EHT512	General Aptitude	A1	2015

# Dept. of EEE

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**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2015-16 to 2019-20)**

**No. of courses relevant to the local, national, regional and global development needs during the last five years**

Academic year	Year of study	No. of courses relevant to the local, national, regional and global development needs			
		Under A2 Regulation		Under A1 Regulation	
		UG (B.Tech.- EEE)	PG (M.Tech.-Power Systems)	UG (B.Tech.- EEE)	PG (M.Tech.-Power Systems)
2019-20	I	2	10	---	---
	II	---	---	11	2
	III	---	---	18	---
	IV	---	---	18	---
2018-19	I	---	---	4	7
	II	---	---	11	2
	III	---	---	18	---
	IV	---	---	18	---
2017-18	I	---	---	4	7
	II	---	---	11	2
	III	---	---	18	---
	IV	---	---	---	---
2016-17	I	---	---	4	7
	II	---	---	11	2
	III	---	---	---	---
	IV	---	---	---	---
2015-16	I	---	---	4	7
	II	---	---	---	---
	III	---	---	---	---
	IV	---	---	---	---

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2019-20)  
(B.Tech.-EEE)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2019-20**

Sl. No.	Course Code	Course Name	Year of study
1	A2EHA701	Constitution of India	I (Under A2 Regulation)
2	A2CII201	Programming for Problem Solving (Theory + Lab)	
3	A1EET209	Digital Electronics	II (Under A1 Regulation)
4	A1EET210	Control Systems	
5	A1EHT101	Professional Communication	
6	A1ACA501	NSS	
7	A1ACA502	NCC	
8	A1ACA503	Sports	
9	A1ACA504	Cultural	
10	A1ACA505	Yoga	
11	A1ACA506	Health & Nutrition	
12	A1ACA507	Entrepreneurship Development	
13	A1ACA509	Professional Ethics & IPR	
14	A1EEL205	Control Systems Lab	III (Under A1 Regulation)
15	A1EET217	Embedded Processors	
16	A1EET309	Artificial Intelligence Techniques	
17	A1CIT374	Object Oriented Programming with JAVA	
18	A1EET314	Utilization of Electrical Energy	
19	A1EET403	MATLAB	
20	A1EET404	Electrical Safety	
21	A1EET405	Energy Audit	
22	A1EET407	Illumination Engineering	
23	A1EET408	Electrical Wiring, Estimation & Costing	
24	A1ACA501	NSS	
25	A1ACA502	NCC	
26	A1ACA503	Sports	
27	A1ACA504	Cultural	
28	A1ACA505	Yoga	
29	A1ACA506	Health & Nutrition	
30	A1ACA507	Entrepreneurship Development	
31	A1ACA509	Professional Ethics & IPR	
32	A1EEL210	Embedded Processors lab	IV (Under A1 Regulation)
33	A1EEP602	Project	
34	A1EET319	Renewable Energy Sources & Integration	
35	A1EET323	Industrial Automation	
36	A1EET324	Power Quality	
37	A1EET403	MATLAB	
38	A1EET404	Electrical Safety	
39	A1EET405	Energy Audit	
40	A1EET407	Illumination Engineering	
41	A1EET408	Electrical Wiring, Estimation & Costing	
42	A1ACA501	NSS	
43	A1ACA502	NCC	
44	A1ACA503	Sports	
45	A1ACA504	Cultural	
46	A1ACA505	Yoga	
47	A1ACA506	Health & Nutrition	
48	A1ACA507	Entrepreneurship Development	
49	A1ACA509	Professional Ethics & IPR	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2019-20)  
(M.Tech.-Power Systems)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2019-20**

Sl. No.	Course Code	Course Name	Year of study
1	A2PST201	Smart grid	I (Under A2 Regulation)
2	A2PST207	Electric and Hybrid Vehicles	
3	A2PST105	Research Methodology & IPR	
4	A2PSL102	Renewable Energy Lab	
5	A2PST213	SCADA System and Applications	
6	A2PST214	Power Quality	
7	A2PST215	AI Techniques	
8	A2ACA501	Constitution of India	
9	A2ACA502	Disaster Management	
10	A2ACA508	Value Education	
11	A1PSP501	Project Phase – I	II (Under A1 Regulation)
12	A1PSP502	Project Phase - II	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2018-19)  
(B.Tech.-EEE)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2018-19**

Sl. No.	Course Code	Course Name	Year of study
1	A1CIT001	Computer Programming	I (Under A1 Regulation)
2	A1CIL001	Computer Programming Lab	
3	A1CHT001	Environmental Studies	
4	A1EHT101	Professional Communication	
5	A1EET209	Digital Electronics	II (Under A1 Regulation)
6	A1EET210	Control Systems	
7	A1EHT101	Professional Communication	
8	A1ACA501	NSS	
9	A1ACA502	NCC	
10	A1ACA503	Sports	
11	A1ACA504	Cultural	
12	A1ACA505	Yoga	
13	A1ACA506	Health & Nutrition	
14	A1ACA507	Entrepreneurship Development	
15	A1ACA509	Professional Ethics & IPR	III (Under A1 Regulation)
16	A1EEL205	Control Systems Lab	
17	A1EET217	Embedded Processors	
18	A1EET309	Artificial Intelligence Techniques	
19	A1CIT374	Object Oriented Programming with JAVA	
20	A1EET314	Utilization of Electrical Energy	
21	A1EET403	MATLAB	
22	A1EET404	Electrical Safety	
23	A1EET405	Energy Audit	
24	A1EET407	Illumination Engineering	
25	A1EET408	Electrical Wiring, Estimation & Costing	
26	A1ACA501	NSS	
27	A1ACA502	NCC	
28	A1ACA503	Sports	
29	A1ACA504	Cultural	
30	A1ACA505	Yoga	
31	A1ACA506	Health & Nutrition	
32	A1ACA507	Entrepreneurship Development	
33	A1ACA509	Professional Ethics & IPR	IV (Under A1 Regulation)
34	A1EEL210	Embedded Processors lab	
35	A1EEP602	Project	
36	A1EET319	Renewable Energy Sources & Integration	
37	A1EET323	Industrial Automation	
38	A1EET324	Power Quality	
39	A1EET403	MATLAB	
40	A1EET404	Electrical Safety	
41	A1EET405	Energy Audit	
42	A1EET407	Illumination Engineering	
43	A1EET408	Electrical Wiring, Estimation & Costing	
44	A1ACA501	NSS	
45	A1ACA502	NCC	
46	A1ACA503	Sports	
47	A1ACA504	Cultural	

48	A1ACA505	Yoga	
49	A1ACA506	Health & Nutrition	
50	A1ACA507	Entrepreneurship Development	
51	A1ACA509	Professional Ethics & IPR	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2018-19)  
(M.Tech.-Power Systems)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2018-19**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Year of study</b>
1	A1PST104	Renewable Energy Sources	I (Under A1 Regulation)
2	A1PST201	Embedded Systems	
3	A1PST205	AI Techniques	
4	A1PST107	Power Quality	
5	A1PST108	Smart Grid	
6	A1PST210	Power System Planning and Reliability	
7	A1PSL102	Simulation Laboratory	
8	A1PSP501	Project Phase - I	II (Under A1 Regulation)
9	A1PSP502	Project Phase - II	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2017-18)  
(B.Tech.-EEE)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2017-18**

Sl. No.	Course Code	Course Name	Year of study
1	A1CIT001	Computer Programming	I (Under A1 Regulation)
2	A1CIL001	Computer Programming Lab	
3	A1CHT001	Environmental Studies	
4	A1EHT101	Professional Communication	
5	A1EET209	Digital Electronics	II (Under A1 Regulation)
6	A1EET210	Control Systems	
7	A1EHT101	Professional Communication	
8	A1ACA501	NSS	
9	A1ACA502	NCC	
10	A1ACA503	Sports	
11	A1ACA504	Cultural	
12	A1ACA505	Yoga	
13	A1ACA506	Health & Nutrition	
14	A1ACA507	Entrepreneurship Development	
15	A1ACA509	Professional Ethics & IPR	III (Under A1 Regulation)
16	A1EEL205	Control Systems Lab	
17	A1EET217	Embedded Processors	
18	A1EET309	Artificial Intelligence Techniques	
19	A1CIT374	Object Oriented Programming with JAVA	
20	A1EET314	Utilization of Electrical Energy	
21	A1EET403	MATLAB	
22	A1EET404	Electrical Safety	
23	A1EET405	Energy Audit	
24	A1EET407	Illumination Engineering	
25	A1EET408	Electrical Wiring, Estimation & Costing	
26	A1ACA501	NSS	
27	A1ACA502	NCC	
28	A1ACA503	Sports	
29	A1ACA504	Cultural	
30	A1ACA505	Yoga	
31	A1ACA506	Health & Nutrition	
32	A1ACA507	Entrepreneurship Development	
33	A1ACA509	Professional Ethics & IPR	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2017-18)  
(M.Tech.-Power Systems)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2017-18**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Year of study</b>
1	A1PST104	Renewable Energy Sources	I (Under A1 Regulation)
2	A1PST201	Embedded Systems	
3	A1PST205	AI Techniques	
4	A1PST107	Power Quality	
5	A1PST108	Smart Grid	
6	A1PST210	Power System Planning and Reliability	
7	A1PSL102	Simulation Laboratory	
8	A1PSP501	Project Phase - I	II (Under A1 Regulation)
9	A1PSP502	Project Phase - II	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2016-17)  
(B.Tech.-EEE)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2016-17**

Sl. No.	Course Code	Course Name	Year of study
1	A1CIT001	Computer Programming	I (Under A1 Regulation)
2	A1CIL001	Computer Programming Lab	
3	A1CHT001	Environmental Studies	
4	A1EHT101	Professional Communication	
5	A1EET209	Digital Electronics	II (Under A1 Regulation)
6	A1EET210	Control Systems	
7	A1EHT101	Professional Communication	
8	A1ACA501	NSS	
9	A1ACA502	NCC	
10	A1ACA503	Sports	
11	A1ACA504	Cultural	
12	A1ACA505	Yoga	
13	A1ACA506	Health & Nutrition	
14	A1ACA507	Entrepreneurship Development	
15	A1ACA509	Professional Ethics & IPR	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2016-17)  
(M.Tech.-Power Systems)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2016-17**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Year of study</b>
1	A1PST104	Renewable Energy Sources	I (Under A1 Regulation)
2	A1PST201	Embedded Systems	
3	A1PST205	AI Techniques	
4	A1PST107	Power Quality	
5	A1PST108	Smart Grid	
6	A1PST210	Power System Planning and Reliability	
7	A1PSL102	Simulation Laboratory	
8	A1PSP501	Project Phase - I	II (Under A1 Regulation)
9	A1PSP502	Project Phase - II	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2015-16)  
(B.Tech.-EEE)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2015-16**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Year of study</b>
1	A1CIT001	Computer Programming	I (Under A1 Regulation)
2	A1CIL001	Computer Programming Lab	
3	A1CHT001	Environmental Studies	
4	A1EHT101	Professional Communication	

**Courses relevant to  
the local, national,  
regional and global  
development needs  
(2015-16)  
(M.Tech.-Power Systems)**

**Courses relevant to the local, national, regional and global development needs during the academic year 2015-16**

<b>Sl. No.</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Year of study</b>
1	A1PST104	Renewable Energy Sources	I (Under A1 Regulation)
2	A1PST201	Embedded Systems	
3	A1PST205	AI Techniques	
4	A1PST107	Power Quality	
5	A1PST108	Smart Grid	
6	A1PST210	Power System Planning and Reliability	
7	A1PSL102	Simulation Laboratory	

# Dept. of Mechanical Engg

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<b>Department of Mechanical Engineering</b>			
<b>S. No</b>	<b>Courses Code</b>	<b>Course Name</b>	<b>Semester</b>
<b>Academic Year 2019-20</b>			
1	A2EHA701	Constitution of India	I
2	A2MED201	Computer Aided Engineering Graphics	II
3	A2EHT001	Professional Ethics and Human Values	III
4	A2CII201	AI Tools and Techniques	IV
5	A2MET201	Design thinking and Product Innovation	IV
6	A2EHA702	Indian Traditional Knowledge	IV
7	A1MET301	Automobile Engineering	V
8	A1MET302	Applications of Engineering Mechanics	V
9	A1MET303	Advanced Materials	V
10	A1MET304	Total Quality Management	V
11	A1MET305	Alternate Sources of Energy	V
12	A1MET306	Advanced Mechanics of Materials	V
13	A1MET307	Non Destructive Testing	V
14	A1MET308	Supply chain management	V
15	A1MET309	Energy Management	VI
16	A1MET310	Robotics	VI
17	A1MET311	Advanced Machining Processes	VI
18	A1MET312	Industrial Safety	VI
19	A1MET313	Refrigeration and Air Conditioning	VI
20	A1MET314	Finite Element Methods	VI
21	A1MET315	Mechatronics	VI
22	A1MET316	Leadership	VI
23	A1MET317	Power Plant Engineering	VII
24	A1MET318	Mechanical Vibrations and Condition Monitoring	VII
25	A1MET319	Automation in Manufacturing	VII
26	A1MET320	Production Planning and Control	VII
27	A1MET321	Computational Fluid Dynamics	VII

28	A1MET322	Creep, Fatigue and Fracture mechanics	VII
29	A1MET323	Product Lifecycle Management	VII
30	A1MET324	Lean Six Sigma	VII
31	A1MET325	Engineering in Motion	VII
32	A1MET326	Interactive Computer Graphics	VII
33	A1MET327	Surface Engineering	VII
34	A1MET328	Management Information Systems	VII
35	A1MET329	Waste Heat Recovery and Co-generation	VII
36	A1MET330	Introduction to Nanotechnology	VII
37	A1MET331	Material Characterization Techniques	VII
38	A1MET332	Instrumentation and Metrology	VII
39	A1MET401	Introduction to Robotics	VII
40	A1MET402	Alternative Fuels and Emissions	VII
41	A1MET403	Production and Operations Management	VII
42	A1MET404	Micro Electrical and Mechanical Systems	VII
43	A1MET405	Product Design	VII
44	A1MET406	Foundation of Computational Fluid Dynamics	VII
45	A1ACA501	NSS	III
46	A1 ACA502	NCC	III
47	A1 ACA503	Sports	III
48	A1 ACA504	Cultural	IV
49	A1 ACA505	Yoga	IV
60	A1 ACA506	Health & Nutrition	IV
61	A1 ACA507	Entrepreneurship Development	V
62	A1 ACA509	Professional Ethics & IPR	VI
63	A1 ACA512	General Aptitude	VII

<b>Academic Year 2018-19</b>			
1	A2EHA701	Constitution of India	I
2	A2MED201	Computer Aided Engineering Graphics	II
3	A1MEL203	Computer Aided Engineering Drawing Laboratory	III
4	A1MEL208	CAD/CAE Laboratory	V
5	A1MET301	Automobile Engineering	V
6	A1MET302	Applications of Engineering Mechanics	V
7	A1MET303	Advanced Materials	V
8	A1MET304	Total Quality Management	V
9	A1MET305	Alternate Sources of Energy	V
10	A1MET306	Advanced Mechanics of Materials	V
11	A1MET307	Non Destructive Testing	V
12	A1MET308	Supply chain management	V
13	A1MET309	Energy Management	VI
14	A1MET310	Robotics	VI
15	A1MET311	Advanced Machining Processes	VI
16	A1MET312	Industrial Safety	VI
17	A1MET313	Refrigeration and Air Conditioning	VI
18	A1MET314	Finite Element Methods	VI
19	A1MET315	Mechatronics	VI
20	A1MET316	Leadership	VI
21	A1MET317	Power Plant Engineering	VII
22	A1MET318	Mechanical Vibrations and Condition Monitoring	VII
23	A1MET319	Automation in Manufacturing	VII
24	A1MET320	Production Planning and Control	VII
25	A1MET321	Computational Fluid Dynamics	VII
26	A1MET322	Creep, Fatigue and Fracture mechanics	VII
27	A1MET323	Product Lifecycle Management	VII
28	A1MET324	Lean Six Sigma	VII

29	A1MET325	Engineering in Motion	VII
30	A1MET326	Interactive Computer Graphics	VII
31	A1MET327	Surface Engineering	VII
32	A1MET328	Management Information Systems	VII
33	A1MET329	Waste Heat Recovery and Co-generation	VII
34	A1MET330	Introduction to Nanotechnology	VII
35	A1MET331	Material Characterization Techniques	VII
36	A1MET332	Instrumentation and Metrology	VII
37	A1MET401	Introduction to Robotics	VII
38	A1MET402	Alternative Fuels and Emissions	VII
39	A1MET403	Production and Operations Management	VII
40	A1MET404	Micro Electrical and Mechanical Systems	VII
41	A1MET405	Product Design	VII
42	A1MET406	Foundation of Computational Fluid Dynamics	VII
43	A1ACA501	NSS	III
44	A1 ACA502	NCC	III
45	A1 ACA503	Sports	III
46	A1 ACA504	Cultural	IV
47	A1 ACA505	Yoga	IV
48	A1 ACA506	Health & Nutrition	IV
49	A1 ACA507	Entrepreneurship Development	V
50	A1 ACA509	Professional Ethics & IPR	VI
51	A1 ACA512	General Aptitude	VII

<b>Academic Year 2017-18</b>			
1	A1CIL001	Computer Programming Laboratory	I
2	A1EHT101	Professional Communication	II
3	A1EHT102	Business Communication	II
4	A1MEL203	Computer Aided Engineering Drawing Laboratory	III
5	A1MEL208	CAD/CAE Laboratory	V
6	A1MET301	Automobile Engineering	V
7	A1MET302	Applications of Engineering Mechanics	V
8	A1MET303	Advanced Materials	V
9	A1MET304	Total Quality Management	V
10	A1MET305	Alternate Sources of Energy	V
11	A1MET306	Advanced Mechanics of Materials	V
12	A1MET307	Non Destructive Testing	V
13	A1MET308	Supply chain management	V
14	A1MET309	Energy Management	VI
15	A1MET310	Robotics	VI
16	A1MET311	Advanced Machining Processes	VI
17	A1MET312	Industrial Safety	VI
18	A1MET313	Refrigeration and Air Conditioning	VI
19	A1MET314	Finite Element Methods	VI
20	A1MET315	Mechatronics	VI
21	A1MET316	Leadership	VI
22	A1MEL210	Robotics and CNC Laboratory	VI
23	RT4103L	Simulation Lab	VI
24	RT4103M	Design/Fabrication Project	VII
25	RT42032	Green Engineering Systems	VII
26	RT42033B	Mechatronics	VII
27	RT42034A	Non Destructive Evaluation	VII

<b>Academic Year 2016-17</b>			
1	A1CIL001	Computer Programming Laboratory	I
2	A1EHT101	Professional Communication	II
3	A1EHT102	Business Communication	II
4	A1ACA501	NSS	III
5	A1 ACA502	NCC	III
6	A1 ACA503	Sports	III
7	A1 ACA504	Cultural	IV
8	A1 ACA505	Yoga	IV
9	A1 ACA506	Health & Nutrition	IV
10	RT4103L	Simulation Lab	VI
11	RT4103M	Design/Fabrication Project	VI
12	RT42032	Green Engineering Systems	
13	RT42033B	Mechatronics	VII
14	RT42034A	Non Destructive Evaluation	VIII
15	RT31037	Metrology & Instrumentation Lab	VI
16	RT31038	Machine Tools Lab	
17	RT32032	Interactive Computer Graphics	VI
18	RT32034	Robotics	VI
19	RT32038	Heat Transfer Lab	VI
20	RT32037B	Computational Fluid Dynamics	VII
<b>Academic Year 2015-16</b>			
1	A1CIL001	Computer Programming Laboratory	I
2	A1EHT101	Professional Communication	II
3	A1EHT102	Business Communication	II
4	RT4103L	Simulation Lab	VI
5	RT4103M	Design/Fabrication Project	VI
6	RT42032	Green Engineering Systems	
7	RT42033B	Mechatronics	VII
8	RT42034A	Non Destructive Evaluation	VIII
9	RT31037	Metrology & Instrumentation Lab	VI
10	RT31038	Machine Tools Lab	
11	RT32032	Interactive Computer Graphics	VI
12	RT32034	Robotics	VI
13	RT32038	Heat Transfer Lab	VI
14	RT32037B	Computational Fluid Dynamics	VII

# Dept. of ECE

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**2019-2020**

## List of courses that have relevance to the local, national, regional and global developmental needs in A1

### B.Tech

S.No	Course Code	Course Name	Semester
1.	A1EHT101	Professional Communication	III
2.	A1EHT102	Business Communication	
3.	A1MET103	Material Science	
4.	A1MAT104	Engineering Mathematics II	
5.	A1PYT105	Electro Magnetic Theory	
6.	A1ACA510	Soft Skills – I	
7.	A1CIT201	Data Structures	IV
8.	A1ECT301	Programming with MAT Lab	
9.	A1ECT302	Computer Organization & Architecture	
10.	A1CYT106	Instrumental Methods of Analysis	
11.	A1MET107	Thermodynamics	
12.	A1CYT108	Applied Analysis	
13.	A1MAT109	Probability and Statistics	
14.	A1MAT110	Complex Variables & Statistical Methods	
15.	A1 ACA 511	Soft Skills – II	
16.	A1CIT206	Object Oriented Programming	V
17.	A1ECT303	Electronic Circuit Analysis	
18.	A1ECT304	VI Using Lab VIEW	
19.	A1 ACA 507	Entrepreneurship Development	
20.	A1CIT203	Operating systems	VI
21.	A1ECT305	Computer Networks	
22.	A1ECT306	Electronic Switching Systems	
23.	A1ECT307	Information Theory and Coding	
24.	A1ECT308	Embedded and Real Time Operating Systems	
25.	A1ECT309	Cellular Mobile Communication	
26.	A1ECT310	Wireless Sensors & Networks	
27.	A1ECT311	Artificial Intelligence & Neural Networks	
28.	A1ECT312	Optical Communication	
29.	A1ECT401	Microcontrollers and Applications	
30.	A1ECT402	Biomedical Engineering	
31.	A1ECT403	Electronic Instrumentation	
32.	A1ACA509	Professional Ethics & IPR	

33.	A1ECT313	Radar Systems	VII
34.	A1ECT314	Satellite Communication	
35.	A1ECT315	Digital Television	
36.	A1ECT316	Digital Image Processing	
37.	A1ECT317	RF Circuit Design	
38.	A1ECT318	Biomedical Instrumentation	
39.	A1ECT319	EMI / EMC	
40.	A1ECT320	Analog IC Design	
41.	A1ECT321	Digital IC Design	
42.	A1ECT404	Principles of Communication Engineering	
43.	A1ECT405	Transducers and Sensors	
44.	A1ECT406	Basics of VLSI Design	
45.	A1 ACA 501	NSS	
46.	A1 ACA 502	NCC	
47.	A1 ACA 503	Sports	
48.	A1 ACA 504	Cultural	
49.	A1 ACA 505	Yoga	
50.	A1 ACA 506	Health & Nutrition	
51.	A1 ACA 508	Foreign Language (Chinese/Japanese/Korean/German)	

### M.Tech

S.No	Course Code	Course Name	Semester
1.	A1VLT109	Research Methodologies	III

## List of courses that have relevance to the local, national, regional and global developmental needs in A2

### B.Tech

S.No	Course Code	Course Name	Semester
1.	A2EHA701	Constitution of India	I
2.	A2CHA701	Environmental Science	III
3.	A2EHA702	Indian Traditional Knowledge	IV
4.	A2ECT401	Information Theory and Coding	V

5.	A2ECT402	VLSI Design		
6.	A2ECT403	Python Programming		
7.	A2ECT501	Principles of Communication Engineering		
8.	A2ECT502	Microcontrollers and Applications		
9.	A2ECT503	Electronic Instrumentation		
10.	A2ECT504	Biomedical Engineering		
11.	A2ECT505	Transducers and Sensors		
12.	A2ECT506	Basics of VLSI Design		
13.	A2ECT404	Optical Communication		VI
14.	A2ECT405	Digital IC Design		
15.	A2ECT406	Soft Computing Techniques		
16.	A2ECT407	EMI/EMC		
17.	A2ECT408	Computer Architecture & Computer Networks		
18.	A2ECT409	Transform Techniques		
19.	A2ECT410	Cellular & Mobile Communication	VII	
20.	A2ECT411	Analog IC Design		
21.	A2ECT412	Digital Image & Video Processing		
22.	A2ECT413	Radar & Satellite Systems		
23.	A2ECT414	Embedded & Realtime Operating Systems		
24.	A2ECT415	Biomedical Signal processing		
25.	A2ECT416	Display Systems		
26.	A2ECT417	System On Chip		
27.	A2ECT418	Speech and Audio Processing		
28.	A2EHT001	Professional Ethics and Human Values		

### M.Tech

S.No	Course Code	Course Name	Semester
1.	A2VLT105	Research Methodology and IPR	I
2.	A2VLT201	Memory Technologies	
3.	A2VLT202	Digital System Design	
4.	A2VLT203	MOS Device Modelling	
5.	A2VLT204	Full Custom Design	
6.	A2VLT205	Selected Topics in Mathematics	
7.	A2VLT206	System Modelling & Simulation	
8.	A2ACA505	Personality Development through Life Enlightenment Skills	
9.	A2ACA506	Sanskrit for Technical Knowledge	
10.	A2ACA507	Stress Management by Yoga	
11.	A2ACA508	Value Education	
12.	A2VLT207	Low power VLSI Design	
13.	A2VLT208	CMOS Mixed Signal VLSI Design	

14.	A2VLT209	VLSI Signal Processing	II
15.	A2VLT210	Testing and Testability	
16.	A2VLT211	Optimization Techniques & Applications to VLSI	
17.	A2VLT212	VLSI Physical Design Automation	
18.	A2ACA501	Constitution of India	
19.	A2ACA502	Disaster Management	
20.	A2ACA503	English for Research Paper Writing	
21.	A2ACA504	Pedagogy Studies	

**2018-2019**

## List of courses that have relevance to the local, national, regional and global developmental needs in A1

### B.Tech

S.No	Course Code	Course Name	Semester
52.	A1CHT001	Environmental Studies	I
53.	A1 ACA 512	General Aptitude	II
54.	A1EHT101	Professional Communication	III
55.	A1EHT102	Business Communication	
56.	A1MET103	Material Science	
57.	A1MAT104	Engineering Mathematics II	
58.	A1PYT105	Electro Magnetic Theory	
59.	A1ACA510	Soft Skills – I	
60.	A1CIT201	Data Structures	
61.	A1ECT301	Programming with MAT Lab	
62.	A1ECT302	Computer Organization & Architecture	
63.	A1CYT106	Instrumental Methods of Analysis	
64.	A1MET107	Thermodynamics	
65.	A1CYT108	Applied Analysis	
66.	A1MAT109	Probability and Statistics	
67.	A1MAT110	Complex Variables & Statistical Methods	
68.	A1 ACA 511	Soft Skills – II	
69.	A1CIT206	Object Oriented Programming	V
70.	A1ECT303	Electronic Circuit Analysis	
71.	A1ECT304	VI Using Lab VIEW	
72.	A1 ACA 507	Entrepreneurship Development	
73.	A1CIT203	Operating systems	VI
74.	A1ECT305	Computer Networks	
75.	A1ECT306	Electronic Switching Systems	
76.	A1ECT307	Information Theory and Coding	
77.	A1ECT308	Embedded and Real Time Operating Systems	
78.	A1ECT309	Cellular Mobile Communication	
79.	A1ECT310	Wireless Sensors & Networks	
80.	A1ECT311	Artificial Intelligence & Neural Networks	
81.	A1ECT312	Optical Communication	
82.	A1ECT401	Microcontrollers and Applications	

83.	A1ECT402	Biomedical Engineering	VII
84.	A1ECT403	Electronic Instrumentation	
85.	A1ACA509	Professional Ethics & IPR	
86.	A1ECT313	Radar Systems	
87.	A1ECT314	Satellite Communication	
88.	A1ECT315	Digital Television	
89.	A1ECT316	Digital Image Processing	
90.	A1ECT317	RF Circuit Design	
91.	A1ECT318	Biomedical Instrumentation	
92.	A1ECT319	EMI / EMC	
93.	A1ECT320	Analog IC Design	
94.	A1ECT321	Digital IC Design	
95.	A1ECT404	Principles of Communication Engineering	
96.	A1ECT405	Transducers and Sensors	
97.	A1ECT406	Basics of VLSI Design	
98.	A1 ACA 501	NSS	
99.	A1 ACA 502	NCC	
100.	A1 ACA 503	Sports	
101.	A1 ACA 504	Cultural	
102.	A1 ACA 505	Yoga	
103.	A1 ACA 506	Health & Nutrition	
104.	A1 ACA 508	Foreign Language (Chinese/Japanese/Korean/German)	

### M.Tech

S.No	Course Code	Course Name	Semester
2.	A1VLT201	Digital System Design	I
3.	A1VLT202	MOS Device Modeling	
4.	A1VLT203	System Modeling and Simulation	
5.	A1VLT204	Digital Design With Verilog HDL	
6.	A1VLT205	VLSI signal processing	
7.	A1VLT206	Logic Synthesis and Verification	
8.	A1VLT207	Custom IC Design	
9.	A1VLT208	Hardware Software Co-Design	II
10.	A1VLT209	DSP Processors and Architectures	
11.	A1VLT210	Scripting Languages	
12.	A1VLT211	Optimization Techniques and applications to VLSI	
13.	A1VLT212	Semiconductor Memory Design and Testing	
14.	A1VLT109	Research Methodologies	III

**2017-18**

## List of courses that have relevance to the local, national, regional and global developmental needs in A1

### B.Tech

S.No	Course Code	Course Name	Semester
105	A1CHT001	Environmental Studies	I
106	A1 ACA 512	General Aptitude	II
107	A1EHT101	Professional Communication	III
108	A1EHT102	Business Communication	
109	A1MET103	Material Science	
110	A1MAT104	Engineering Mathematics II	
111	A1PYT105	Electro Magnetic Theory	
112	A1ACA510	Soft Skills – I	
113	A1CIT201	Data Structures	IV
114	A1ECT301	Programming with MAT Lab	
115	A1ECT302	Computer Organization & Architecture	
116	A1CYT106	Instrumental Methods of Analysis	
117	A1MET107	Thermodynamics	
118	A1CYT108	Applied Analysis	
119	A1MAT109	Probability and Statistics	
120	A1MAT110	Complex Variables & Statistical Methods	
121	A1 ACA 511	Soft Skills – II	
122.	A1CIT206	Object Oriented Programming	V
123.	A1ECT303	Electronic Circuit Analysis	
124.	A1ECT304	VI Using Lab VIEW	
125.	A1 ACA 507	Entrepreneurship Development	
126	A1CIT203	Operating systems	VI
127	A1ECT305	Computer Networks	
128	A1ECT306	Electronic Switching Systems	
129	A1ECT307	Information Theory and Coding	
130	A1ECT308	Embedded and Real Time Operating Systems	
131	A1ECT309	Cellular Mobile Communication	
132	A1ECT310	Wireless Sensors & Networks	
133	A1ECT311	Artificial Intelligence & Neural Networks	
134	A1ECT312	Optical Communication	
135	A1ECT401	Microcontrollers and Applications	
136	A1ECT402	Biomedical Engineering	
137	A1ECT403	Electronic Instrumentation	

138	A1ACA509	Professional Ethics & IPR	VII
139	A1ECT313	Radar Systems	
140	A1ECT314	Satellite Communication	
141	A1ECT315	Digital Television	
142	A1ECT316	Digital Image Processing	
143	A1ECT317	RF Circuit Design	
144	A1ECT318	Biomedical Instrumentation	
145	A1ECT319	EMI / EMC	
146	A1ECT320	Analog IC Design	
147	A1ECT321	Digital IC Design	
148	A1ECT404	Principles of Communication Engineering	
149	A1ECT405	Transducers and Sensors	
150	A1ECT406	Basics of VLSI Design	
151	A1 ACA 501	NSS	
152	A1 ACA 502	NCC	
153	A1 ACA 503	Sports	
154	A1 ACA 504	Cultural	
155	A1 ACA 505	Yoga	
156	A1 ACA 506	Health & Nutrition	
157	A1 ACA 508	Foreign Language (Chinese/Japanese/Korean/German)	

### M.Tech

S.No	Course Code	Course Name	Semester
15.	A1VLT201	Digital System Design	I
16.	A1VLT202	MOS Device Modeling	
17.	A1VLT203	System Modeling and Simulation	
18.	A1VLT204	Digital Design With Verilog HDL	
19.	A1VLT205	VLSI signal processing	
20.	A1VLT206	Logic Synthesis and Verification	
21.	A1VLT207	Custom IC Design	II
22.	A1VLT208	Hardware Software Co-Design	
23.	A1VLT209	DSP Processors and Architectures	
24.	A1VLT210	Scripting Languages	
25.	A1VLT211	Optimization Techniques and applications to VLSI	
26.	A1VLT212	Semiconductor Memory Design and Testing	
27.	A1VLT109	Research Methodologies	III

**2016-17**

## List of courses that have relevance to the local, national, regional and global developmental needs in A1

### B.Tech

S.No	Course Code	Course Name	Semester
158	A1CHT001	Environmental Studies	I
159	A1 ACA 512	General Aptitude	II
160	A1EHT101	Professional Communication	III
161	A1EHT102	Business Communication	
162	A1MET103	Material Science	
163	A1MAT104	Engineering Mathematics II	
164	A1PYT105	Electro Magnetic Theory	
165	A1ACA510	Soft Skills – I	
166	A1CIT201	Data Structures	
167	A1ECT301	Programming with MAT Lab	
168	A1ECT302	Computer Organization & Architecture	
169	A1CYT106	Instrumental Methods of Analysis	
170	A1MET107	Thermodynamics	
171	A1CYT108	Applied Analysis	
172	A1MAT109	Probability and Statistics	
173	A1MAT110	Complex Variables & Statistical Methods	
174	A1 ACA 511	Soft Skills – II	V
175.	A1CIT206	Object Oriented Programming	
176.	A1ECT303	Electronic Circuit Analysis	
177.	A1ECT304	VI Using Lab VIEW	
178.	A1 ACA 507	Entrepreneurship Development	VI
179	A1CIT203	Operating systems	
180	A1ECT305	Computer Networks	
181	A1ECT306	Electronic Switching Systems	
182	A1ECT307	Information Theory and Coding	
183	A1ECT308	Embedded and Real Time Operating Systems	
184	A1ECT309	Cellular Mobile Communication	
185	A1ECT310	Wireless Sensors & Networks	
186	A1ECT311	Artificial Intelligence & Neural Networks	
187	A1ECT312	Optical Communication	
188	A1ECT401	Microcontrollers and Applications	

189	A1ECT402	Biomedical Engineering	VII
190	A1ECT403	Electronic Instrumentation	
191	A1ACA509	Professional Ethics & IPR	
192	A1ECT313	Radar Systems	
193	A1ECT314	Satellite Communication	
194	A1ECT315	Digital Television	
195	A1ECT316	Digital Image Processing	
196	A1ECT317	RF Circuit Design	
197	A1ECT318	Biomedical Instrumentation	
198	A1ECT319	EMI / EMC	
199	A1ECT320	Analog IC Design	
200	A1ECT321	Digital IC Design	
201	A1ECT404	Principles of Communication Engineering	
202	A1ECT405	Transducers and Sensors	
203	A1ECT406	Basics of VLSI Design	
204	A1 ACA 501	NSS	
205	A1 ACA 502	NCC	
206	A1 ACA 503	Sports	
207	A1 ACA 504	Cultural	
208	A1 ACA 505	Yoga	
209	A1 ACA 506	Health & Nutrition	
210	A1 ACA 508	Foreign Language (Chinese/Japanese/Korean/German)	

### M.Tech

S.No	Course Code	Course Name	Semester
28.	A1VLT201	Digital System Design	I
29.	A1VLT202	MOS Device Modeling	
30.	A1VLT203	System Modeling and Simulation	
31.	A1VLT204	Digital Design With Verilog HDL	
32.	A1VLT205	VLSI signal processing	
33.	A1VLT206	Logic Synthesis and Verification	
34.	A1VLT207	Custom IC Design	
35.	A1VLT208	Hardware Software Co-Design	II
36.	A1VLT209	DSP Processors and Architectures	
37.	A1VLT210	Scripting Languages	
38.	A1VLT211	Optimization Techniques and applications to VLSI	
39.	A1VLT212	Semiconductor Memory Design and Testing	
40.	A1VLT109	Research Methodologies	III

**2015-2016**

## List of courses that have relevance to the local, national, regional and global developmental needs in A1

### B.Tech

S.No	Course Code	Course Name	Semester
211	A1CHT001	Environmental Studies	I
212	A1 ACA 512	General Aptitude	II
213	A1EHT101	Professional Communication	III
214	A1EHT102	Business Communication	
215	A1MET103	Material Science	
216	A1MAT104	Engineering Mathematics II	
217	A1PYT105	Electro Magnetic Theory	
218	A1ACA510	Soft Skills – I	
219	A1CIT201	Data Structures	
220	A1ECT301	Programming with MAT Lab	
221	A1ECT302	Computer Organization & Architecture	
222	A1CYT106	Instrumental Methods of Analysis	
223	A1MET107	Thermodynamics	
224	A1CYT108	Applied Analysis	
225	A1MAT109	Probability and Statistics	
226	A1MAT110	Complex Variables & Statistical Methods	
227	A1 ACA 511	Soft Skills – II	
228.	A1CIT206	Object Oriented Programming	V
229.	A1ECT303	Electronic Circuit Analysis	
230.	A1ECT304	VI Using Lab VIEW	
231.	A1 ACA 507	Entrepreneurship Development	
232	A1CIT203	Operating systems	VI
233	A1ECT305	Computer Networks	
234	A1ECT306	Electronic Switching Systems	
235	A1ECT307	Information Theory and Coding	
236	A1ECT308	Embedded and Real Time Operating Systems	
237	A1ECT309	Cellular Mobile Communication	
238	A1ECT310	Wireless Sensors & Networks	
239	A1ECT311	Artificial Intelligence & Neural Networks	
240	A1ECT312	Optical Communication	
241	A1ECT401	Microcontrollers and Applications	
242	A1ECT402	Biomedical Engineering	
243	A1ECT403	Electronic Instrumentation	

244	A1ACA509	Professional Ethics & IPR	VII
245	A1ECT313	Radar Systems	
246	A1ECT314	Satellite Communication	
247	A1ECT315	Digital Television	
248	A1ECT316	Digital Image Processing	
249	A1ECT317	RF Circuit Design	
250	A1ECT318	Biomedical Instrumentation	
251	A1ECT319	EMI / EMC	
252	A1ECT320	Analog IC Design	
253	A1ECT321	Digital IC Design	
254	A1ECT404	Principles of Communication Engineering	
255	A1ECT405	Transducers and Sensors	
256	A1ECT406	Basics of VLSI Design	
257	A1 ACA 501	NSS	
258	A1 ACA 502	NCC	
259	A1 ACA 503	Sports	
260	A1 ACA 504	Cultural	
261	A1 ACA 505	Yoga	
262	A1 ACA 506	Health & Nutrition	
263	A1 ACA 508	Foreign Language (Chinese/Japanese/Korean/German)	

### M.Tech

S.No	Course Code	Course Name	Semester
41.	A1VLT201	Digital System Design	I
42.	A1VLT202	MOS Device Modeling	
43.	A1VLT203	System Modeling and Simulation	
44.	A1VLT204	Digital Design With Verilog HDL	
45.	A1VLT205	VLSI signal processing	
46.	A1VLT206	Logic Synthesis and Verification	
47.	A1VLT207	Custom IC Design	II
48.	A1VLT208	Hardware Software Co-Design	
49.	A1VLT209	DSP Processors and Architectures	
50.	A1VLT210	Scripting Languages	
51.	A1VLT211	Optimization Techniques and applications to VLSI	
52.	A1VLT212	Semiconductor Memory Design and Testing	
53.	A1VLT109	Research Methodologies	III

# Dept. of CSE

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

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B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Department: CSE

Criteria: 1.1.1

A2 Regulation (2019-20)

List of courses that have relevance to the local, national, regional and global developmental needs.

S. No	Course Code	Course Title	Sem	Relevance	Description
1	A2MED201	Computer Aided Engineering Graphics	I	Global	Students acquire the essential design skills required to work globally in an interdisciplinary environment
2	A2EHA701	Constitution of India	I	National	Students study the constitution of the Nation more in detail to act within boundaries as responsible Engineers who contribute to the social, political and economic system of the Nation
3	A2CIW201	Basic IT Tools Workshop	II	Global	Students acquire skills globally required for essential knowledge of computer hardware/software and tools for designing and editing
4	A2CIT202	Design Thinking and Product Innovation	III	Local	Students acquire the skills required to identify Socially relevant problems and think about potential solutions using technical knowledge they develop in later years
5	A2MST001	Managerial Economics & Financial Analysis	III	Regional	Students are taught managerial and financial skills particular to specific regions across the globe
6	A2EHA702	Indian Traditional Knowledge	III	National	Students study the tradition and cultural heritage of the Nation that allow them to think of solutions to preserve the same for the future generations
7	A2XXT1XX	Biology for Engineers	IV	Global	Students are taught the essential Biological aspects required to Understand the connection of nature with science and Engineering that could apply to tackle

					complex problems
8	A2CHA701	Environmental Science	IV	Global	Students are taught the essential environmental aspects required to Understand the connection of environment with science and Engineering that could apply to tackle complex problems
9	A2CII202	AI Tools, Techniques & Applications	V	Global	Students are imparted the technical knowledge to work across multiple disciplines to develop intelligent applications
10	A2CIP601	Socially Relevant Project	V	Local	Students are encouraged to work on projects that address local community needs
11	A2EHL002	English-II (Technical English)	VI	Global	Students acquire skills globally required for advanced communication in a professional context particularly in their workplace
12	A2CIP602	Mini Project	VI	Global	Students are encouraged to work on projects that allow them to acquire basic technical knowledge to make them globally acceptable
13	A2CIT201	Internet of Things (IOT)	VII	Global	Students are imparted the technical knowledge to work across multiple disciplines to develop intelligent applications
14	A2EHT001	Professional Ethics and Human Values	VII	Regional	Students are taught ethical practices in implementation in various regions across the globe
15	A2CIP603	Project Phase-I	VII	Global	Students are encouraged to work on projects that address global challenges using advanced technologies
16	A2CIP604	Project Phase - II	VIII	Global	Students are encouraged to work on projects that address global challenges using advanced technologies

## A1 Regulation (2015-16)

### List of courses that have relevance to the local, national, regional and global developmental needs.

S.No	Subject Code	Subject	Sem	Relevance	Description
1	A1MEW001	Basic Engineering Workshop	I	Global	Students acquire skills globally required for essential knowledge of computer hardware/software and the fundamental hands-on knowledge of other disciplines
2	A1EHL001	English Language Practice - I	I	Global	Students acquire practical skills globally required for basic communication in a professional context particularly in their workplace
3	A1EHT101	Professional Communication	II	Global	Students acquire skills globally required for advanced communication in a professional context particularly in their workplace
4	A1EHT102	Business English	II	Global	Students acquire practical skills globally required for advanced communication in a professional context particularly in their workplace
5	A1EHL002	English Language Practice - II	II	Global	Students acquire practical skills globally required for advanced communication if they would want to seek higher studies in business
6	A1MST001	Managerial Economics & Financial Analysis	III	Regional	Students are taught Managerial and Financial skills particular to specific regions
7	A1EHA501	Health & Nutrition/Entrepreneurship/Foreign Language/M OOC	III/IV	National, Local, Global	In Health & Nutrition, some challenges in the National context are addressed
8	A1EHA502	Professional Ethics & IPR	III/IV	Regional	Students are taught ethical practices in implementation in various regions across the globe
9	A1EHA503	NSS/NCC/Sports/Cultural/ Yoga	III/IV	National, Local	Students are encouraged to participate mostly in local competitions in sports yoga etc., NCC and NSS allows them community service at local and subsequently at National level

10	A1EHA504	Soft Skills - I	III/IV	global	Students acquire softskills globally required for communication in a professional context particularly in their workplace
11	A1EHA505	Soft Skills - II	III/IV	global	Students acquire softskills globally required for communication in a professional context particularly in their workplace
12	A1EHA506	General Aptitude	III/IV	global	Students are provided opportunity to strengthen their logical skills required in a professional context particularly in their workplace
13	A1CIT322	Routing & Switching Concepts	V	global	Students acquire Industry skills and certifications required to work globally
14	A1CIT326	Penetration Testing	VII	National	Students acquire Industry skills and certifications required to safeguard networks against attacks
15	A1CIL208	Software Engineering Lab (Project Oriented)	VII	Local	Students are encouraged to work on projects that address local community needs
16	A1CIP602	Project	VIII	Global	Students are encouraged to work on projects that address global challenges

# Dept. of Chemical Engg

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B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

1.1.1- List of Courses that have relevance to the local, national, regional and global developmental needs in A1 & A2

<b>2019-20</b>		
<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>
A2MED201	Computer Aided Engineering Graphics	2019
A2EHL001	English-I	2019
A1CHT302	Petroleum Refining	2015
A1CHT306	Industrial Pollution Control & Engineering	2015
A1CHT309	Nano Technology	2015
A1CHT310	Food Technology	2015
A1MET402	Alternative Fuels & Emmisions	2015
A1ACA507	Entrepreneurship Development	2015
A1MST001	Managerial Economics & Financial Analysis	2015
A1CHT313	Bio Chemical Engineering	2015
A1CHT317	Corrosion & Control	2015
A1CHT321	Industrial Safety & Hazard Management	2015
A1CET402	Air Pollution & Control	2015
A1CHT323	Organic Solar Cells	2015

**2018-19**

<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>
A1CHT302	Petroleum Refining	2015
A1CHT306	Industrial Pollution Control & Engineering	2015
A1CHT309	Nano Technology	2015
A1CHT310	Food Technology	2015
A1MET402	Alternative Fuels & Emmisions	2015
A1ACA507	Entrepreneurship Development	2015
A1MST001	Managerial Economics & Financial Analysis	2015
A1CHT313	Bio Chemical Engineering	2015
A1CHT317	Corrosion & Control	2015
A1CHT321	Industrial Safety & Hazard Management	2015
A1CET402	Air Pollution & Control	2015

**2017-18**

<b>Name of the Course</b>	<b>Course Code</b>	<b>Year of introduction</b>
A1EHL001	English Language Practice –I	2015
A1CHT302	Petroleum Refining	2015
A1CHT306	Industrial Pollution Control & Engineering	2015
A1CHT309	Nano Technology	2015
A1CHT310	Food Technology	2015
A1MET402	Alternative Fuels & Emmisions	2015
A1ACA507	Entrepreneurship Development	2015
A1MST001	Managerial Economics & Financial Analysis	2015
RT41026	NON CONVENTIONAL SOURCES OF ENERGY	2013

RT41084	BIOCHEMICAL ENGINEERING	2013
RT41089	NANO TECHNOLOGY	2013
RT42081	INDUSTRIAL SAFETY & HAZARD MANAGEMENT	2013
RT42082C	CORROSION & ITS CONTROL	2013
RT42083B	OPTIMIZATION OF CHEMICAL PROCESSES	2013
RT42084A	CATALYSIS	2013

### 2016-17

Name of the Course	Course Code	Year of introduction
A1CHT302	Petroleum Refining	2015
RT32025	MANAGEMENT SCIENCE	2013
RT32056	IPR AND PATENTS	2013
RT32089	MASS TRANSFER OPERATIONS LAB II	2013
RT31087	PROCESS HEAT TRANSFER LAB	2013
RT31088	MASS TRANSFER OPERATIONS LAB-I	2013
RT41026	NON CONVENTIONAL SOURCES OF ENERGY	2013
RT41084	BIOCHEMICAL ENGINEERING	2013
RT41089	NANO TECHNOLOGY	2013
RT42081	INDUSTRIAL SAFETY & HAZARD MANAGEMENT	2013
RT42082C	CORROSION & ITS CONTROL	2013
RT42083B	OPTIMIZATION OF CHEMICAL PROCESSES	2013
RT42084A	CATALYSIS	2013

### 2015-16

Name of the Course	Course Code	Year of introduction
RT32025	MANAGEMENT SCIENCE	2013
RT32056	IPR AND PATENTS	2013
R42081	INDUSTRIAL SAFETY & HAZARD MANAGEMENT	2010
R42084	CORROSION AND ITS CONTROL	2010
R42087	NUCLEAR REACTOR ENGINEERING	2010
R4208A	ENERGY ENGINEERING	2010

# Dept. of IT

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1.1.1. List of courses that have relevance to the local, national, regional and global developmental needs in A1&A2

S.No	Name of Course	Course Code	Curriculum Regulation
1	Environmental Studies	A1CHT001	A1
2	Professional Ethics & IPR	A1EHA502	A1
3	UNIX & Shell Programming	A1CIT204	A1
4	Object Oriented Programming	A1CIT206	A1
5	Design of UNIX Operating System	A1CIT218	A1
6	Routing & Switching Concepts	A1CIT322	A1
7	Service Oriented Architecture	A1CIT332	A1
8	Data Sciences & Analytics	A1CIT316	A1
9	Firewalls & VPN	A1CIT325	A1
10	Neural Networks & Soft Computing	A1CIT315	A1
11	Adhoc Networks	A1CIT323	A1
12	Enterprise JAVA Beans	A1CIT333	A1
13	Digital Forensics & Investigations	A1CIT348	A1
14	Penetration Testing	A1CIT326	A1
15	Enterprise Resource Planning	A1CIT335	A1
16	.NET Technologies	A1CIT334	A1
17	Cryptography & Information Security	A1CIT347	A1
18	Information Security & Management Standards	A1CIT327	A1
19	Environmental Science	A2CIA703	A2
20	Humanities-II (PE & HV)	A2CIT004	A2
21	Problem Solving with Programming	A2CII201	A2
22	Constitution of India	A2CIA701	A2
23	Design Thinking	A2CIT205	A2
24	Programming with Python	A2CII303	A2
25	Open Elective-I (Human Resources Development & Organizational Behavior)	A2CIT501	A2
26	Indian Traditional Knowledge	A2CIA702	A2
27	Object oriented Programming	A2CII305	A2
28	AI Tools	A2CII206	A2

29	Socially Relevant Project-I	A2CIP601	A2
30	Web Technologies	A2CII311	A2
31	IOT	A2CIT207	A2
32	Statistical & Predictive Analytics	A2CIT412	A2
33	Data Analytics & Tools	A2CIT413	A2
34	Machine Learning	A2CIT414	A2
35	Switching, Routing and Wireless Essentials	A2CIT421	A2
36	Enterprise Networks, Security & Automation	A2CIT422	A2
37	Cryptography & Information Security	A2CIT423	A2
38	Information Security and Management Standards	A2CIT424	A2
39	Middleware Technologies	A2CIT432	A2
40	Block chain fundamentals	A2CIT433	A2
41	Digital Forensics & Investigations	A2CIT443	A2
42	E-Commerce	A2CIT444	A2
43	Natural Language Processing	A2CIT461	A2
44	Cryptography and Information Security	A2CIT462	A2
45	Cloud Computing (Salesforce/Amazon)	A2CIT463	A2

# Dept. of MBA

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### **1.1.1**

Curricula developed and implemented have relevance to the local, national, regional and global developmental needs which is reflected in Programme outcomes (POs), Programme Specific outcomes (PSOs) and Course Outcomes (COs) of the Programmes offered by the Institution

List of courses that have relevance to the local, national, regional and global developmental needs in A1&A2

<b>S.No</b>	<b>Course Code</b>	<b>Course Name</b>	<b>Semester</b>
<b>1</b>	<b>A1MBT301</b>	<b>Financial Inclusion &amp; Micro Credit</b>	<b>4</b>
<b>2</b>	<b>A2MBT503</b>	<b>Planning Structuring and Financing Small Business</b>	<b>3</b>
<b>3</b>	<b>A2MBT508</b>	<b>Rural and Urban Infrastructure Development</b>	<b>3</b>

# GUEST LECTURES

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# 2019-20

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B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Guest lectures arranged to students during the Academic Year 2019-20**

<b>S. No.</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	12-07-2019	Mr.P. Raj Kumar	QA/QC Engineer	Afcons Infra Ltd.	World Class Construction Practices of Indian Railways
2	30-12-2019	Mr.P. Raj Kumar	QA/QC Engineer	Afcons Infra Ltd.	Career Objectives in Civil Engineering
3	11-02-2020	Mr.K.S.R. Prasad	Director (Technical)	CQCE RKEC JV	Concrete & Bridges
4	07-03-2020	K.Venkataraman	Regional head (Technical)	Ultratech Cement Ltd.	Concrete Mix Proportioning

## Sample proofs for the Guest Lectures conducted in the Academic Year 2019-20

**Name of the Guest:** Mr. P. Raj Kumar

**Designation:** QA/QC Civil Engineer, Ghana railway project, Afcons Infra. Ltd

**Topic of the guest lecture:** Career Objectives in Civil Engineering

**Date:** 30.12.2019

II year Students (A & B Sections)





**Name of the Guest:** Mr. KSR Prasad  
**Designation:** Director (Technical), CQCE RKEC JV  
**Topic of the guest lecture:** Concrete & Bridges  
**Date:** 11.02.2020

II year Students (A & B Sections)



**Name of the Guest:** K.Venkataraman  
**Designation:** Regional head( Technical), Ultratech Cement Ltd.  
**Topic of the guest lecture:** Concrete mix Proportioning  
**Date:** 07.03.2020  
II year Students (A & B Sections)





**Guest lectures arranged for students during the academic year 2019-20**

<b>S.no.</b>	<b>Date of lecture</b>	<b>Title of the lecture</b>	<b>Name and designation of the resource person</b>	<b>Beneficiary</b>
1	14/02/2020	Advanced Power Electronic Controllers	Dr. N.Jayaram, Assistant Professor, NIT, Tadepalligudem, Andhra Pradesh	III B.Tech. Students and Faculty
2	27/08/2019	Overview of Thermal Power Stations	Sri. M. Ramachandra, AGM (Rtd.), TPP, Steel Plant, Visakhapatnam	II B.Tech. Students and Faculty
3	13/08/2019	Design and Maintenance of Substations	Sri. A.Rama Krishna, Asst. Divisional Engineer, APEPDCL., Vizianagaram	III B.Tech. Students and Faculty
4	23/07/2019	Power System Automation Using SCADA and GAS Insulated Substations	by Sri. P.Ram Prasad, Deputy Manager, Power Grid corporation India Ltd., (PGCIL)	III & IV B.Tech. students and Faculty

**Department of Mechanical Engineering:****1.1.1. 2 Guest lectures arranged to students (5Ys)**

A.Y.	Number of guest lectures arranged
2019-20	06
2018-19	19
2017-18	09
2016-17	09
2015-16	04

<b>Academic Year 2019-20</b>					
S.No	Topic	Resource Person	Date	Target audience	No. of participants
1	Product Life cycle Management	Gopi Krishna Sivvam COO,centre of excellence in maritime and ship building	17-10-19	IV B Tech	55
2	Technologies & Developments	MrMuraliSundaram-Tech consultant-Npedia technologies-Chennai	1-10-19	IV B Tech	112
3	GATE	Dr BSV Prasad Patnaik Prof-IIT Chennai	06-09-19	III & IV B Tech	95
4	Abroad education-facilities-opportunities	S Ramaraju IFS consultant	17-07-19	IVB.Tech	66
5	Automobile Engg(Brake and Slip control systems)	Prasad Arun Kumar, Lead Engineer,Mahindra& Mahindra Pvt Ltd, Chennai	04-07-19	III B.Tech	53
6	Interactive session (Internships)	Dr BSV Prasad Patnaik Prof-IIT Chennai	26-09-19	III B.Tech	54
<b>Academic Year 2018-19</b>					
1	Interactive session	Mr.Senthilprakash KIA MOTORS	30-03-19	III B.Tech	58
2	GATE Orientation	Negi	25-02-19	III B.Tech	52
3	Aerospace engineering perspective from mechanical engineering A	Mr. S SRaju-Vice President-Verisim Tech Pvt Ltd-BLR	22-02-19	III B.Tech	56
4	Aerospace engineering A	Mr. S SRaju-Vice President-Verisim Tech Pvt	25-12-18	IIB.Tech	55

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1) Guest Lecture on “ Product Life cycle Management ” delivered by Gopi Krishna Sivvam COO, centre of excellence in maritime and ship building on 17-10-19 for IV B. Tech students.



2) Guest Lecture on “ Npedia Technology ” delivered by Mr MuraliSundaram-Tech consultant-Npedia technologies-Chennai on 01-10-19 for IV B. Tech students.



3) Guest Lecture on “ GATE – orientation – Applied Mechanics” delivered by Dr B S V Prasad Patnaik , Professor -IIT Chennai on 06-09-19 for III & IV B. Tech students.



4) Guest Lecture on “Abroad education- facilities-opportunities” delivered by S Ramaraju, IFS consultant on 17-07-19 for IV B. Tech students.



5) Guest Lecture on “Automobile Engineering (Brake and Slip control systems)” delivered by Prasad Arun Kumar, Lead Engineer, Mahindra & Mahindra Pvt Ltd, Chennai on 04-07-19 for III B. Tech students.



6) Guest Lecture on “ Internships-opportunities at reputed institutions” delivered by Dr B S V Prasad Patnaik , Professor -IIT Chennai on 26-09-19 for III B. Tech students.

**AY 2019-20**

## Guest lectures

AY 2019-20

S.No.	Title	Resource person	Date	Target audience
1	Industrial Induction	R. Sarath chandra, BEL, Bangalore.	30.08.2019	I year B.Tech
2	Stealth Technologies	Sri K. Srikanth, Scientist-C, NSTL, Visakhapatnam	19.07.19	II year B.Tech
3	Design Constraints of Embedded Systems	V. Babu Prasad, Scientist-E, NSTL, Visakhapatnam	12.07.19	III year B.Tech

### 1. Industrial Induction



Mr. R. Sarath chandra, BEL, Bangalore had involved in a motivational talk with I year students.

List of Students attended

S. No.	Regd.No	Name of the Student
1	18331A0416	BENDI MANOHAR
2	19331A0401	ADAPAKA SAI LAKSHMI
3	19331A0403	AGATAMUDI HARSHA VARDHINI
4	19331A0404	ALLA DINESH
5	19331A0405	ALLU SOWRYA DEEPIKA
6	19331A0406	AMARAVENKATA LAXMI
7	19331A0407	AMPOLU RAMBABU
8	19331A0408	AMUJURU SAI VISHNU ARVIND KIRITI
9	19331A0410	ARISSETTY VENKATA NAVEEN

10	19331A0411	BACHU V V S L SURYA SINDU
11	19331A0412	BADAGALA SUNEEL
12	19331A0413	BALI CHAITANYA
13	19331A0415	BALI PRASANTH KUMAR
14	19331A0416	BALLA PRAVEENA
15	19331A0417	BALLA SASHANK
16	19331A0418	BANKAPALLI VENKATA SAI HARINI
17	19331A0419	BENDALAMJOGI JEEVAN KUMAR
18	19331A0420	BENDI VASANTH KUMAR
19	19331A0421	BETHANAPALLI GAYATHRI
20	19331A0422	BODASINGI RAVINDRA
21	19331A0423	BODDU SWATHI
22	19331A0424	BOLLI HARIKIRAN
23	19331A0425	BONI DIVYA
24	19331A0426	BOYAPATI GOVARDHAN REDDY
25	19331A0427	BUDDHA UDAY GANESH SAI KASI RAM
26	19331A0428	CHANDARAM GUNA DURGA SINDHUJA
27	19331A0429	CHEELLAPILLA LEELA VYSHNAVI
28	19331A0430	CHENNA PARTHIV SREEMANTH
29	19331A0431	CHIDAPAREDDI LIKHITHA
30	19331A0432	CHINTADA PRASANNA KUMAR
31	19331A0433	CHINTHAPALLI YAMINI
32	19331A0434	CHIRUKURI UTTAM
33	19331A0435	CHITIKANA ALEKHYA
34	19331A0436	CHOPPA RAHUL PRIYATHAM
35	19331A0438	CHOWDARI NIKHILESH KUMAR
36	19331A0439	CHUKKALA SAI DEVAKI NANDAN
37	19331A0440	DABBADA KUSUMA
38	19331A0441	DAKI KOMALI
39	19331A0442	DANTULURI HEMANTH VARMA
40	19331A0443	DARBHA SRI VENKATA SAI GNANA AMULYA
41	19331A0444	DUPPATLA SAIPRASANTH
42	19331A0445	DWARAPUREDDI HARSHITHA
43	19331A0446	EROTHU ANUSHA
44	19331A0447	GADULA BHANU GANESH
45	19331A0448	GANDIPILLI SUGUNA
46	19331A0449	GANGADA UDAY KIRAN
47	19331A0450	GATTI KATYAYANI DEVI
48	19331A0451	GIDUTURI HEMA CHANDRIKA
49	19331A0452	GOCHIPATHALA SRINIVAS
50	19331A0453	GOMPA ROHIT
51	19331A0454	GOMPA SNEHIT GURU VENKAT GANESH
52	19331A0455	GRANDHI NIKHILA
53	19331A0456	GRANDHI YAMINI SARASWATHI
54	19331A0457	GUBBALA LAKSHMIKANTH
55	19331A0458	GULLA VARSHINI
56	19331A0459	GUMMUDU PRAVEEN KUMAR
57	19331A0460	GURUGUBELLI DIVYA
58	19331A0461	GURUVU ATCHUTHA RAO
59	19331A0462	INTI PRIYANKA
60	19331A0463	JAKKILINKI ESWARI PRASANNA
61	19331A0464	JAMPANA VENKATA SIVA SATYA SAI NIHARIKA
62	19331A0465	JANKALA MOUNIKA

63	19331A0466	JERRIPOTHULA RANGA SAI PAVAN
64	19331A0467	KADIYAM SAI CHIRANJEEVI
65	19331A0468	KALLA DURGA PRASAD
66	19331A0469	KALLEMPUDI SRAVANI LAVANYA
67	19331A0470	KALMACHETI NAGA SRAVYA
68	19331A0471	KAMSU HARI
69	19331A0472	KANAKAM RESHMA
70	19331A0473	KANDI DEVI PRAVALLIKA
71	19331A0474	KANDULA VASAVI TANUJA
72	19331A0475	KANURI HARSHA VARDHAN
73	19331A0476	KARANAM NARSUNaidu
74	19331A0477	KARASU DINESH
75	19331A0478	KARNAM ADARSH
76	19331A0479	KASI SAI LAYA
77	19331A0480	KATHULAPALLI SRIHITHA REDDY
78	19331A0481	KOCHERLA SAI KIRAN
79	19331A0482	KOMMURI SANDEEP SAI
80	19331A0483	KOMPELLA CHALAPATHI SIVA KARTHIK
81	19331A0484	KONDETI GNANESWARA RAO
82	19331A0485	KONDETI SUPRIYA
83	19331A0486	KORADA BHARGAVI
84	19331A0487	KORADA SAI KIRAN
85	19331A0489	KOTHAPALLI SUKANYA
86	19331A0490	KOTLA GNANESWAR RAO
87	19331A0491	KOYYANA KARUNAKAR
88	19331A0492	KULUKURI VENKATA SAI GAYATRI
89	19331A0493	KUNISETTI SAI ABHIGNA
90	19331A0494	KUTCHARLAPATI AASHRITHA
91	19331A0495	LAGADAPATI RAVI TEJA
92	19331A0496	LAMA STEWENCE NEWTON
93	19331A0497	MADDALA VENKATESH
94	19331A0498	MAGANTI ANVESH
95	19331A0499	MAJJI RAVEENDRANATH
96	19331A04A0	MALIJEDDI SUKUMAR
97	19331A04A1	MANDALA LAHARI
98	19331A04A2	MANDAPATI AJAY VARMA
99	19331A04A3	MATA SNEHA
100	19331A04A4	MEDA RAKESH
101	19331A04A5	MERUPULA AKANKSHA
102	19331A04A6	MOHAMMED TAHSEEN FATIMA
103	19331A04A7	MOLLI ANUSHA
104	19331A04A8	MUNAGANDA JAYA KRISHNA
105	19331A04A9	MUVVALA VAHINI
106	19331A04B0	NADIPENA JYOTHI PRASANTH
107	19331A04B1	NAGOTU BHANU PRAKASH
108	19331A04B2	NALLAPARAJU VENKATA SAI RAMA CHANDRA RAJU
109	19331A04B3	NALLI THANUSHA SAI
110	19331A04B4	NARRA SYAHITHA
111	19331A04B5	NEELAMSETTI JAYA PRAKASH
112	19331A04B6	NIDIGATLA KARUNA NIKHIL
113	19331A04B7	NIDUGUNDA JYOTHSNA PRIYA
114	19331A04B8	NIKHIL VAMSI MANIKANTA YADAV KORADA

115	19331A04B9	NIKHILA MAJJI
116	19331A04C0	NIRUJOGI LOKESH
117	19331A04C1	PADALA BHASKARA SAI VAMSI KRISHNA
118	19331A04C2	PADALA DURGA SHYAM KUMAR REDDY
119	19331A04C3	PADALA NAVYA
120	19331A04C4	PADALA VYSHNAVI SINDHU
121	19331A04C5	PAKALAPATI SAKETH GAJAPATHI
122	19331A04C6	PAMETI NEERAJ
123	19331A04C7	PANANGAPALLI SRAVANI
124	19331A04C8	PANDRANKI SYAMALA
125	19331A04C9	PANTALA KAVYA
126	19331A04D0	PARASELLI ATCHUTH
127	19331A04D1	PARIMI HEMANJALI
128	19331A04D2	PATHRI SHARMILA
129	19331A04D8	PODUGU TARUNGOPAL
130	19331A04D9	POLUPARTHI VAMSI
131	19331A04E0	POTHALA JITHENDRA NAIDU
132	19331A04E1	PUDI VAMSI
133	19331A04E2	PUSAPATI SAI ASHITA
134	19331A04E3	RAMBHATLA RAJESWARI
135	19331A04E4	RANDHI HEMANTH
136	19331A04E5	RANDHI YUVA SIVA SAI PREETHI
137	19331A04E6	REDDI SRI HARSHAVARDHAN
138	19331A04E7	REGANI YAMINI
139	19331A04E8	SAI SRIJA KOTRA
140	19331A04E9	SALLANGI BHAAVIN
141	19331A04F0	SAMBANGINARAPPAGARI CHANDRA SEKHAR
142	19331A04F1	SANKA PRIYANKA
143	19331A04F7	SHAIK ISMAIL
144	19331A04F8	SHAIK SADHIK
145	19331A04F9	SHAIK SHOEB ALI
146	19331A04G0	SIMHADRI AMRUTHA
147	19331A04G1	SIRASAPALLI VARAHA SANDEEP
148	19331A04G2	SRI BARIKI RUPACHANDRIKA
149	19331A04G3	SRIVISHNU SATHVIK PEDDINTI
150	19331A04G4	SRIYA JYOTHI BEHERA
151	19331A04G5	SUNKARI VENKATA NAGA PRANEELA
152	19331A04G6	TALE LOKESH
153	19331A04G7	TANDRANKI THANUJA
154	19331A04G8	TARLADA RAVI
155	19331A04G9	THOTAKURA NAGA MOHAN
156	19331A04H0	TODABANDI LATISH KUMAR
157	19331A04H1	TOGARA SATYANARAYANA RAJU
158	19331A04H6	VANDANA MUDADLA
159	19331A04H7	VARRI MAHAVEER
160	19331A04H8	VEGIREDDI SIVAPRASAD
161	19331A04H9	VELAGA SARISHMA
162	19331A04I0	VELAMALA CHANDRA LEKHA
163	19331A04I1	VETCHA RAJITHA
164	19331A04I2	VIJINIGIRI SOWJANYA
165	19331A04I3	VIKRAM KEERTHANA
166	19331A04I4	VOLLI SASIBHUSHANA RAO
167	19331A04I5	VOMMIDAPU CHINNI

168	19331A04I6	VULLI SARATH KUMAR
169	19331A04I7	YAMALA TARUN
170	19331A04I8	YAMALA VAMSI
171	19331A04I9	YEERLA MANOGNYA
172	19331A04J0	YEJALA SIRISHA RANI
173	19331A04J1	YELAKA GEETHAMRUTHA
174	19331A04J2	YELLABILLI DEEPAK

## 2. Stealth Technologies



Sri K. Srikanth, Scientist-C, Naval Science Technological Laboratories, Visakhapatnam had delivered a guest lecture on Stealth Technologies.

### List of Students attended

S. No.	Regd.No	Name of the Student attended
1	18331A0401	AKI VENKATA SAI LAKSHMI
2	18331A0402	AKKIVARAPU BHARATKUMAR
3	18331A0403	ALLU JITENDRA
4	18331A0404	ANDHAVARAPU SAI SAMPATH KUMAR

5	18331A0405	ANGULURI VISWATEJA
6	18331A0406	ANNEPU DINESH KUMAR
7	18331A0407	ANUPOJU AMRUTHA
8	18331A0408	ANUPOJU HARICHANDANA
9	18331A0409	ATTADA JAGADEESH
10	18331A0410	BACHIRAJU VENKATA VIKAS
11	18331A0411	BADAMPUDI SAI KUMAR
12	18331A0412	BANDALUPPI AKHIL SAI
13	18331A0413	BASAVANA JYOTHIKA
14	18331A0414	BASWA LAKSHMI
15	18331A0415	BEHARA YESWANTH
16	18331A0417	BETHA AVINASH
17	18331A0418	BHAVANA SAI HEMANTH KUMAR
18	18331A0419	BILLA SIVA SRI SAI SANKAR
19	18331A0420	BOBBADI PADMAVATHI
20	18331A0421	BODDEPALLI VENKATA PRASOONA
21	18331A0422	BONULA PRAMODA
22	18331A0423	BUDDHA NIHAR
23	18331A0424	BUDUMURU DHARANI
24	18331A0425	CHANDANA PRIYA MISRA
25	18331A0426	CHARISHMA POTNURU
26	18331A0427	CHELLIBOYINA SAINANDINI
27	18331A0428	CHINTADA MANOHAR
28	18331A0429	CHINTALAPATI BHARGAVA RAJU
29	18331A0430	CHINTAPALLI KAVYA SREE
30	18331A0431	CHODIPILLI RAVI KUMAR
31	18331A0432	CHUNDURI AJAN KUMAR
32	18331A0433	DAMARASINGU AVINASH
33	18331A0434	DARAPU VINAY SANTOSH REDDY
34	18331A0435	DARRU JERUSHA SHARON ROSE
35	18331A0436	DASARI GAYATRI
36	18331A0437	DATLA SURYANARAYANA RAJU
37	18331A0438	DATLA VENKATA SURYA SUBRAMANYA RAJU
38	18331A0439	DEVARAPALLI PUJITHA
39	18331A0440	DEVUPALLI DEEPAK SUMANTH
40	18331A0441	DHANNANA GANESH
41	18331A0442	EARLA JYOTHIRMAIE
42	18331A0443	EARLA RAHUL SAI
43	18331A0444	EJAZ ABBAS

44	18331A0445	GANDEM PRADEEP
45	18331A0446	GANGIREDLA PAVANI
46	18331A0447	GARIMELLA TUSHARA
47	18331A0448	GOMPA PRANEETHA
48	18331A0449	GOPISETTY LYDIA JOYCE
49	18331A0450	GOTTETI MOUNIKA
50	18331A0451	GOVADA GOWTHAM KRISHNA
51	18331A0452	GOVIND LENKA
52	18331A0453	GUGGILAPU HEMANTH
53	18331A0454	GUJJALA SRINIVAS
54	18331A0455	GUJJELA AJITH
55	18331A0456	GUMMIDI GOWRI SHANKAR
56	18331A0457	HEMADRI NEERAJA
57	18331A0458	INDUKURI PRAMOD VIJAY VARMA
58	18331A0459	JAGANA HARSHAVARDHAN
59	18331A0460	JAKA LOKESH
60	18331A0461	KADULURI SASI KIRAN REDDY
61	18331A0462	KAJA MOHINUDDIN
62	18331A0463	KANCHIPATI GANGADHAR
63	18331A0464	KETALA GAYATRI SANJANA
64	18331A0465	KILAPARTHI KRANTI KIRAN
65	18331A0466	KINTADA SATYA BRAHMANANDA BHAVANI SHANKAR
66	18331A0467	KOMMOJU SAI PRAMODH
67	18331A0468	KONA PUSHPANAND
68	18331A0469	KORUPOLU SAI NIKHITHA
69	18331A0470	KOTNI SHANMUKHA RAO
70	18331A0471	KUMARAPU VENKATA SRI HARSHA
71	18331A0472	KUPPA ROHINI BHAVANI
72	18331A0473	KUPPILI DILEEP
73	18331A0474	KUPPILI VENKATA SAI PRANEETH
74	18331A0475	KURAMANA YESWANTH RAJ
75	18331A0476	LAGUDU DINESH KUMAR
76	18331A0477	LAGUDU GEETHA PRASANNA
77	18331A0478	LAGUDU JAYANTH
78	18331A0479	LANKA HARI BABU
79	18331A0480	LONDA CHAKRAVARTHI
80	18331A0481	M SHEKHAR
81	18331A0482	MAKKUVA ABHINAV PAVAN
82	18331A0483	MAMIDI CHANDINI

83	18331A0484	MANAPURAM THRYLOKYA
84	18331A0485	MANDA NIKHIL VAMSI
85	18331A0486	MANDAPAKA SAI MANOGNA
86	18331A0487	MANDAPATI ADITYA VARMA
87	18331A0488	MARADANA SOWMYA
88	18331A0489	MARRAPU ANUSHA
89	18331A0490	MARUVADA VENKATA NAGA SWETHA
90	18331A0491	MD ABDUL AZEEM
91	18331A0492	MEESALA NITHEESH CHANDRA NAIDU
92	18331A0493	MEESALA RAJESH NAIDU
93	18331A0494	MEESALA TARUN KUMAR
94	18331A0495	MEGHANA VANGAPANDU
95	18331A0496	MOIDA SAI SUDHEER
96	18331A0497	MOPADA APARNA
97	18331A0498	MOPIDEVI V B SATWIK
98	18331A0499	MUDARAPU SAI THILOTHAMA
99	18331A04A0	MUMMULURI SAI LAKSHMI
100	18331A04A1	NADIPENA VISWA VEERA SASHI BHARGAVI
101	18331A04A2	NAKKA PRAVEEN VARUN
102	18331A04A3	NAKKINA BHANU TEJA
103	18331A04A4	NAMBURI PAVANVISHNU VARMA
104	18331A04A5	NARAPATI NARENDRA
105	18331A04A6	NEKKANTI TAPASWI CHOWDARY
106	18331A04A7	NIMMAKA KRISHNA VAMSI
107	18331A04A8	NISHTALA SAI SAILAJA
108	18331A04A9	PALAKA RAJESH
109	18331A04B1	PALAPARTHI NAGESH BABU
110	18331A04B2	PALLE YASODA
111	18331A04B3	PANDIRI SHANMUKH RAM CHANDU
112	18331A04B4	PASUPULETI MOSES PAUL
113	18331A04B5	PATIBANDLA NAGA DURGA SUPRIYA
114	18331A04B6	PILAKA VAMSI
115	18331A04B7	POTNURU SAI ADITYA
116	18331A04B8	PRAVEEN KUMAR DEBARKI
117	18331A04B9	PREMKUMAR LINGALA
118	18331A04C0	PUSARLA NIKHITHA POORNIMA
119	18331A04C1	PUTTEPU MANASA
120	18331A04C2	PYLA NEHA
121	18331A04C3	RAJANA JAYACHANDRA

122	18331A04C4	RALLAPALLI LEELA PRAKASH
123	18331A04C5	RALLAPALLI USHA
124	18331A04C6	RAMBA JYOTHI KIRAN
125	18331A04C7	RATNALA ABHINAV
126	18331A04C8	RAVANAM SRI RAMA KRISHNA MAHESH
127	18331A04C9	RAVI MOUNIKA
128	18331A04D0	REDDI LAHARI
129	18331A04D1	REYYI DEENARATNAM
130	18331A04D2	REYYI KEERTHI
131	18331A04D3	RONGALI SHYAMALA
132	18331A04D4	SABBAVARAPU SATYA SAI VARUN
133	18331A04D5	SABBAVARAPU VIKASINI
134	18331A04D6	SAI DINAKAR KAKUNURI
135	18331A04D7	SAI ROSHNI MATTA
136	18331A04D8	SARIDI ANITHA
137	18331A04D9	SASANAPURI SAI VINOD
138	18331A04E0	SATTARU MOUNIKA
139	18331A04E1	SATTINEEDI SIVA SAI
140	18331A04E2	SEERA KIRAN KUMAR
141	18331A04E3	SHEIK FATHIMA BEEBI
142	18331A04E4	SIMHADRI PAVAN MANIKANTA
143	18331A04E5	SURABATTULA VENKATA SATWIK
144	18331A04E6	SURAVAJJHALA VENKATA VINAY
145	18331A04E7	TAMMINANA DILEEP KUMAR
146	18331A04E8	TANDADA SIREESHA
147	18331A04E9	TANGUDU MANIKANTA
148	18331A04F0	TEELLA DHANUNJAYA
149	18331A04F1	TELIKEPALLI VARA SASIDHAR
150	18331A04F2	TENNETI SAHITYA PREETHI
151	18331A04F3	TETALI HARISH REDDY
152	18331A04F4	THEEDA UMASRI
153	18331A04F5	THIDA PRIYANKA
154	18331A04F6	THOTA TEJO VENKATESH
155	18331A04F7	TOTTARA PRAVALLIKA
156	18331A04F8	URITI PRATHYUSHA
157	18331A04F9	VAKADA SAI KIRAN
158	18331A04G0	VAKAMULLU NIKHILESH
159	18331A04G1	VALLABHANENI KUSHAL
160	18331A04G2	VANGAPANDU GEETANJALI

161	18331A04G3	VARANASI VAMSI
162	18331A04G4	VEDULA KANAKA VENKATA NEELAMANI KARTHIK
163	18331A04G5	VEGI DURGA SANTOSH DEEPIKA
164	18331A04G6	VENNELA SAI PRIYAMVADA
165	18331A04G7	VETCHA KARISHMA
166	18331A04G8	VUDA GOWRI SHANKER AKSHIT
167	18331A04G9	VULLI MANIKUMAR
168	18331A04H0	VURRAKULA SOWMYA
169	18331A04H1	YAKKALA BHARATH KUMAR
170	18331A04H2	YANDRAPU ATCHYUTHA
171	18331A04H3	YELLAPANTULA SAI ANIRUDH
172	18331A04H4	YETURI SPANDANA
173	18331A04H5	GEDELA SAI PRASAD
174	18331A04H6	MOGANTI NITISH RAJ
175	18331A04H7	REDDI SAI TEJA
176	18331A04H8	SIRIPURAPU RAKESH KUMAR
177	18331A04H9	VEDULA NARASIMHA PRAMOD
178	18331A04I0	VELUVARTHI ADITYA VARDHAN

### 3. Design Constraints of Embedded Systems





Mr. V. Babu Prasad, Scientist E, NSTL, Visakhapatnam had interacted with Students about Design Constraints of Embedded Systems.

List of Students attended

S. No.	Regd.No	Name of the Student
1	16331A04C6	PATASI BHAGYA RAJU
2	16331A04D7	POTNURU AJAY KUMAR
3	16331A04F9	SIRIKI DAMODARA SAI KUMAR
4	17331A0402	AISHWARYA REDNAM
5	17331A0403	AKHIL SARIPILLI
6	17331A0404	AKIRI HINDUJA
7	17331A0405	AKULA KALYAN BABU
8	17331A0407	AMARANA PREETHAM
9	17331A0408	APPALABATTULA SAI LIKHITHA
10	17331A0409	ATCHUTHA VENKATA S S L SUKRASH KUMAR
11	17331A0410	AVINASH SABOTO
12	17331A0411	AVUGADDI ASHOK VARDHAN
13	17331A0413	BANDARU SAI TEJA
14	17331A0414	BANGARI DASWANTH
15	17331A0415	BANGARI NANI
16	17331A0416	BARU LEELA SAI KIRAN
17	17331A0417	BATTINA PAVAN KUMAR
18	17331A0418	BATTULA SHALINI
19	17331A0419	BIRLANGI JEEVAN
20	17331A0420	BOBBADI ASWANI KUMAR
21	17331A0421	BODDALA MADHU
22	17331A0422	BODU LEELADHAR
23	17331A0423	BOMMISSETTY BHARGAV DHARMA TEJA
24	17331A0424	BORRA RAMYA
25	17331A0425	BOWRIBILLI RENUKA
26	17331A0426	BOYINA NAVEEN

27	17331A0427	BUDANKAYALA DURGA SAI KIRAN
28	17331A0428	BUGATA ANUSHA
29	17331A0430	CHALUMURI JAHNAVI
30	17331A0431	CHAND USMANI
31	17331A0432	CHERUKURI GANESH
32	17331A0433	CHETLAPALLI ANANTHA VENKATA SAI SRIVANI
33	17331A0434	CHINTADA ARUNA KUMARI
34	17331A0435	CHINTALAPUDI SONY RAMYA
35	17331A0436	CHINTAPALLI SRAVANKUMAR
36	17331A0437	CHIPPADA MEGHANA
37	17331A0438	DANTHULURI AVINASH VARMA
38	17331A0439	DANTULURI SAMBAMURTHI RAJU
39	17331A0440	DARA PREETHI
40	17331A0441	DASI EMMANUEL DAWSON
41	17331A0442	DESETTI LOKESH
42	17331A0443	DODDI SWAPNA
43	17331A0444	DOGGA KEERTHI
44	17331A0445	DOPA ALEKYA
45	17331A0446	DUMPALA DILEEP KUMAR
46	17331A0447	DUMPALA SRIKANTH
47	17331A0448	DUNGALA SRI DEVI
48	17331A0450	ELURU PAVANKUMAR
49	17331A0451	G SUKANKSHA
50	17331A0452	GANTA RAGHURAM GOPAL
51	17331A0453	GEDDA SAI KUMAR
52	17331A0467	JANAKOTI SOMNATH ACHARY
53	17331A0468	JUMMU JESSI
54	17331A0469	K ESWAR
55	17331A0470	KAKI DIVYA JYOTHI
56	17331A0471	KALIVARAPU MAHESH
57	17331A0473	KANDAPU KAVYA
58	17331A0474	KANTIMAHANTI SRI SAI KRISHNA CHAITANYA
59	17331A0475	KARAKAVALASA SAI YASASWINI
60	17331A0476	KARRI SUSHMA
61	17331A0477	KASA SAI JAYA KRISHNA
62	17331A0478	KASPAMAKKUVA VIJAYA BHARGAVI
63	17331A0479	KATTA CHAITANYA
64	17331A0480	KENGUVA GANESH
65	17331A0481	KOLIMALA DHANASREE
66	17331A0482	KOLLA SRAVANTHI
67	17331A0483	KOPPULA ANAND CHANDRA
68	17331A0484	KOTNI DHARAN KUMAR
69	17331A0485	KOYYA KRUSHNA
70	17331A0486	KUPPANNAGARU S S V S NIKHIL PATNAIK
71	17331A0487	LANDA SWETHA

72	17331A0488	LANKA SANJAY
73	17331A0489	LEKKALA BHARATKUMAR
74	17331A0490	LENKA PUSHPA
75	17331A0491	MALLA PREM SANDEEP
76	17331A0492	MALLA SIVA SAI AJAY
77	17331A0493	MANAPURAM SAIKIRAN
78	17331A0494	MANDAPAKA SRI SAI RAM
79	17331A0495	MANDAPATI SRAVYA RAJ
80	17331A0496	MANTINA SAI SURYA SANKAR
81	17331A0497	MARADA AJAY
82	17331A0498	MAVURI YASWANTH
83	17331A0499	MEDAPATI GOWTHAMI
84	17331A04A0	MINDI SARAYU
85	17331A04A1	MITTIREDDY NAVEEN KUMAR
86	17331A04A2	MITTISILA JOSEPH RAJ KUMAR
87	17331A04A5	MOKA KALYAN
88	17331A04A7	MUKALA BHAVYASRI
89	17331A04A8	MUPPANA MANOJ KUMAR
90	17331A04A9	NABHA ARUN KUMAR
91	17331A04B0	NAGIREDDI GOWTHAM
92	17331A04B1	NAGIRI NAVYA
93	17331A04B2	NALLA MANOJ KUMAR
94	17331A04B3	NALLAPARAJU GEETHIKA
95	17331A04B4	NALLURI PRANEETHA
96	17331A04B5	NAMMI JANAKI RAM
97	17331A04B6	NAUPADA NIHARIKA
98	17331A04B7	NAVAGANA BINNY KARTHIK
99	17331A04B8	NIDIGATTU JAYALAKSHMI
100	17331A04B9	NULAKAJODU DEEPAK
101	17331A04C0	PALISSETTI RAHUL
102	17331A04C1	PALISSETTY SOWJANYA
103	17331A04C2	PANASA VENKATESH NAIDU
104	17331A04C3	PANDIRI PERIN KUMAR
105	17331A04C4	PANDRANKI GOWTHAM
106	17331A04C5	PASUPUREDDI ROSHINI
107	17331A04C6	PATHIVADA HARI PRASAD
108	17331A04C7	PAVITRA MENTADA
109	17331A04C8	PENDURTHI BHANU PRAKASH
110	17331A04C9	PENDYALA INDRANI
111	17331A04D0	PENTA MANASA
112	17331A04D9	PODIPIREDDI HEMANTH
113	17331A04E0	POLA LOKESH
114	17331A04E1	POLUMURU APARNA
115	17331A04E2	POTNURU RAMANI SAI KISHORE
116	17331A04E3	POTNURU VENKATA HARSHITH GOPAL

117	17331A04E4	PRASANNA KUMARI SANKILI
118	17331A04E5	PRIYA SATYADEEP
119	17331A04E6	PULAMARASETTI CHANDRA SEKHAR
120	17331A04E7	REDDY GIRIDHAR RAO
121	17331A04E8	SABBATI SUNITHA
122	17331A04E9	SAKILE PRUDHVIRAJ
123	17331A04F0	SAROJA SRUTHI RAJANALA
124	17331A04F1	SEEPANA LALITYA
125	17331A04F2	SHAIK BASHEER
126	17331A04F3	SHAIK SABEER BASHA
127	17331A04G9	VADDI KAVYA
128	17331A04H0	VAJRAPU PRIYANKA
129	17331A04H1	VANGALAPUDI NAVEEN
130	17331A04H2	VATAPALLI SAI RAMYA SREE
131	17331A04H3	VEDURUPARTHI V V SATYA SUMANTH
132	17331A04H4	VELAGALA SAI KOUSHIK KUMAR
133	17331A04H5	VEMAVARAPU SATISH KUMAR
134	17331A04H6	VIJAPURAPU PARVATHI
135	17331A04H7	VOODIKALA NAVYA SREE
136	18335A0405	CHALLA ROSHINI
137	18335A0406	DENDUKURI TEJASWINI
138	18335A0407	DRAKSHARAPU DIVAKAR
139	18335A0408	DULAPU HIMABINDHU
140	18335A0409	GUTTU ASWINI
141	18335A0410	JAKKA VEERA VENKATA SURYA NARAYANA
142	18335A0411	YELLAPANTULA PAVAN KRISHNA
143	18335A0412	K NIRANJAN KRISHNA MOHAN
144	18335A0413	KASSETTI SHYAM KRISHNA CHAITANYA
145	18335A0414	KAVALAPATI VISALAKSHI
146	18335A0415	KEDARISETTI SAINADH
147	18335A0416	KETHA ANUSHA VARDHINI
148	18335A0417	KONATHALA VAMSI
149	18335A0419	KOSURU YASODHA RAO
150	18335A0420	VEDIT VARDHAN MACHARLA
151	18335A0421	PASUPULETI PAVAN PRASAD
152	18335A0422	PETLA MOHAN KRISHNA
153	18335A0423	PILLA VINAY KUMAR
154	18335A0424	PITHANI GOPIKA BHAVANI
155	18335A0425	POTHALA DEEPAK SAI
156	18335A0426	PRIYA INDIRA
157	18335A0427	RATNALA DEEPAK
158	18335A0428	SURLA BALAJI AKHIL KUMAR
159	18335A0429	UDAY SAI KIRAN GANDIREDDY

## Department: CSE

### Criteria: 1.1.1

2019-20

### Guest Lectures arranged

Sno	Date	Title	Venue	Participants	Summary
1	03/06/2019	ANN & DEEP LEARNING	Knuth Lab, IT, MVGRCE(A)	18	Dr. R B V Subrahmanyam, Prof., Dept. of CSE, NIT-Warangal, has delivered a guest lecture on Artificial Neural Networks to the students of CSE during the FDP organized in association with E&ICT - NITW.
2	01/12/2019	Web App Development & IoT	Turing Lab, CSE,MVGRCE(A)	34	M.Vamsi Krishna, Asst. Prof., CSE has delivered a hands on lecture on 'Web App Development & IoT' to the students of CSE during a student club event.
3	3/10/2020	ML tools Installation	Godel Lab,CSE,MVGRCE(A)	25	Dr. S.Srinivasa Rao, Prof., CSE has delivered a guest lecture on Introduction to ML and few basic concepts to the students of CSE.
4	3/10/2020	ML tools Installation	Godel Lab,CSE,MVGRCE(A)	25	Dr. P.Srinivasa Rao, Assoc. Prof., CSE has delivered a guest lecture on setting up ML tools in machine and demonstrated few example to the students of CSE.
5	3/10/2020	TENSOR FLOW	Godel Lab,CSE,MVGRCE(A)	25	Dr. P.Satish, Assoc. Prof., CSE has delivered a guest lecture on Importance of analytics with few examples to the students of CSE.
6	3/10/2020	ML tools	Godel Lab,CSE,MVGRCE(A)	25	Dr. C.Kalyan Chakravarthy, Prof., CSE has delivered a guest lecture on Applications of ML in mobile apps to the students of CSE.
7	3/10/2020	TENSOR FLOW	Godel Lab,CSE,MVGRCE(A)	25	M.Vamsi Krishna, Asst. Prof., CSE has delivered a guest lecture on installation and image processing using ML algorithms to the students of CSE.
8	3/10/2020	TENSOR FLOW	Godel Lab,CSE,MVGRCE(A)	25	Dr. G.Suvarna Kumar, Assoc. Prof., CSE has delivered a guest lecture on GAN and few basic concepts of ML to the students of CSE.

**Academic Year (2019-2020)**

<b>S. No</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	20/07/2019	Dr.S.Venkateswara Rao	Technical Manager	Dupont, Canada	Piloting and Scaling up of chemical process

**Academic Year (2019-20) S.No 1:**

**Title of the Guest Lecture:** Piloting and Scaling up of chemical process

There are several specific challenges to scaling up process systems and pilot plants. In this lecture, speaker covered the following challenges, including:

- Challenge #1: Non-linear Scale-Up – It's not that easy
- Challenge #2: Reaction Kinetics – Do you mix well?
- Challenge #3: Chemical Equilibrium – How fast do you react?
- Challenge #4: Material Properties – What are you made of?
- Challenge #5: Fluid Dynamics – How do you flow?
- Challenge #6: Thermodynamics – Are you hot or cold?
- Challenge #7: Equipment Selection – How do you put it together?
- Challenge #8: Agitation Issues- Can you afford to mix it up?
- How To Overcome These Challenges – You CAN do it

**GUEST LECTURES ORGANIZED FOR THE ACADEMIC YEAR  
2019-2020**

<b>S.no</b>	<b>Date</b>	<b>Resource Person</b>	<b>Organization</b>	<b>Topic Delivered</b>
1	02.11.2019	Sri Krishna Swamy, Thinker, Academician, Entrepreneur	Ametur, Chennai	Open Talk on various Marketing and Finance related issues
2	26.02.2020	Sri RVG Kulkarni, Zonal Head-AP&Telangana	HDFC Bank Ltd.	Expert Talk on the Careers in Banking Industry, Digital Banking & Personality development

## Sample Proofs

**Fwd: Fw: Invitation for lecture at MVGR Vizianagaram**

1 message

Dr. MVV Bhanu <vijibhanu@gmail.com>  
To: KSS RAMA Raju <mbahod.mvgr@gmail.com>

Tue, Feb 25, 2020 at 10:22 AM

----- Forwarded message -----

From: <lyyapu.TagoreNagendra@hdfcbank.com>  
Date: Tue, 25 Feb 2020, 10:12  
Subject: Fw: Invitation for lecture at MVGR Vizianagaram  
To: <vijibhanu@gmail.com>

Dear Sir,,,,,,,,,,,,,Thanks for the invite, i had a detailed discussion with Ms. Mohan and the understood that 26th Morning 11 to 1 Clock will be a feasible time for us and for MVGR

We will meet you on 26th Morning around 11 Clock at MVGR Campus

My Senior Mr.RVG Kulkarni ( SVP II & Zonal Head ( TS/ AP ) ) will address the MBA and Engineering final year students and faculty.

Name of persons visiting the campus

Mr.RVG Kulkarni ( SVP II & Zonal Head ( TS/ AP ) )  
Mr.T Praveen ( DVP & Cluster Head )  
Mr D Gopala krishan (VP and Cluster Head)

**Topic of discussion : Career in Banking , Digital Banking aspects, Personality Development.**

Duration : 1.3hrs , followed by 30 mins Q & A  
Thanks & Regards,  
I.Tagore Nagendra  
Branch Manager  
Vizianagaram Branch  
Ph: 9391203602.

----- Forwarded by Iyyapu Tagore Nagendra/Retail Branch Banking/Vizayanagaram-Andhrapradesh/HBL on 25-02-2020 10:11 -----

From: Iyyapu Tagore Nagendra/Retail/NAD Kotha Road-Andhra Pradesh/HBL  
To: principal.mvgr@gmail.com, Dean4students@mvgrce.edu.in  
Cc: D Gopala Krishana/Retail/Jagadamba Centre/HBL@HDFCBANK, Thirthingoth Praveen/Retail Branch Banking/Jagadamba Centre/HBL@HDFCBANK, Sreedevi Viswanadha/Govt.&Institutional Business/Vizag/HBL@HDFCBANK  
Date: 24-02-2020 10:29  
Subject: Invitation for lecture at MVGR Vizianagaram  
Sent by: Iyyapu Tagore Nagendra

Dear Sir,,,,,,,,,,,,,Thanks for the invite, i had a detailed discussion with Ms. Mohan and the understood that 26th Morning 11 to 1 Clock will be a feasible time for us and for MVGR

We will meet you on 26th Morning around 11 Clock at MVGR Campus

My Senior Mr.RVG Kulkarni ( SVP II & Zonal Head ( TS/ AP ) ) will address the MBA and Engineering final year students and faculty.

Name of persons visiting the campus

Mr.RVG Kulkarni ( SVP II & Zonal Head ( TS/ AP ) )  
Mr.T Praveen ( DVP & Cluster Head )  
Mr D Gopala krishan (VP and Cluster Head)

**Topic of discussion : Career in Banking , Digital Banking aspects, Personality Development.**

Duration : 1.3hrs , followed by 30 mins Q & A

0/30/2019

Gmail - Intimation to arrange for an Open Talk with Sri Krishna Swamy on 2nd November, 2019



2019-20

KSS RAMA Raju <mbahod.mvgr@gmail.com>

**Intimation to arrange for an Open Talk with Sri Krishna Swamy on 2nd November, 2019**  
1 message

**Dean4Students (MVGR)** <dean4students@mvgrce.edu.in>  
To: mbahod.mvgr@gmail.com  
Cc: "Dr. YMC Sekhar" <vpac.mvgr@gmail.com>, Principal <principal.mvgr@gmail.com>

Wed, Oct 30, 2019 at 11:44 AM



DEAN - STUDENTS  
**Maharaj Vijayaram Gajapathi Raj**  
College of Engineering (Autonomous)



Accredited by NBA of AICTE. Graded 'A' by NAAC of UGC. Approved by AICTE, New Delhi,  
Permanently Affiliated to JNTU, Kakinada & Listed at 2(A) and 12(B) of the UGC ACT 1956

☎ 08922 241732 ☎ 08922 241733 ☎ 08922 241734 (R)  
e-mail: dean4students@mvgrce.edu.in

Dear Sir,

As per the direction of the Principal, we are to inform you that on 2nd November, 2019, Sri Krishna Swamy, Thinker, Academician and Entrepreneur from Chennai has given consent to give an open talk on various **Marketing and Finance related issues which can help the faculty members of MBA to be brainstormed enrich their knowledge base.** So you are requested to make necessary arrangements for the same on **2nd November, 2019 from 2.00 p.m.onwards.**

Further, the seminar hall of the your department has been given as venue to Godavari Rurla Development Society for organizing a seminar on Rural Development. So please spare the venue and depute your attendant on that day for the smooth and convivial support and from our end. Please do extend your support and oblige.

Thank you.

Sincerely,  
S. Mohan Kumar



# 2018-19

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Guest lectures arranged to students during the Academic Year 2018-19**

<b>S. No.</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	23.07.2018	Dr. Srinivas Allena	Associate Professor	Washington state University-Tricities	Infrastructure Resilience and Sustainability with advanced materials
2	26.07.2018	Dr. A. R. Santha Kumar	Dean	ANNA University	Pervious Concrete
3	15.09.2018	Mr. Kanuri Venkata Naga Ravi	Superintendent Engineer	Metropolitan regional urban transport development authority, Visakhapatnam	Project Planning Techniques
4	01.02.2019	Dr. Ligy Philip	Professor	IIT Madras	Waste water recycling: A sustainable option for water management
5	15.03.2019	Sri. Naveen Chakravarthi Vedula	Associate Director	SAMARTH Infra Engineering Technocrats Pvt. Ltd	Demand for Civil Engineers in future
6	15.03.2019	Mr. A. Rajesh	Senior Section Engineer	North East Frontier Railways	Importance of Skills for future Engineers
7	08.04.2019	Mr. D. Kishore Kumar	Construction Manager	Larsen & Toubro, Chennai	Practice of Construction Management – Use of BIM
8	08.04.2019	Mr. A. Anil Karunakar	Technical Officer- Civil Eng. Division	Nuclear Fuel Complex, Dept. of Atomic Energy	Safety measures to be followed by engineers in industry

**Guest lectures arranged for students during the academic year 2018-19**

<b>S.no.</b>	<b>Date of lecture</b>	<b>Title of the lecture</b>	<b>Name and designation of the resource person</b>	<b>Beneficiary</b>
1	20/12/2018	Project Based Learning	Dr. V.Sandeep, Assistant Professor, Electrical Engineering Dept., CU of Karnataka, Gulbarga	IV B.Tech. students and Faculty
2	02/12/2018	Operations of Thermal Power Plants Introduction of hot line works	Sri. V.Srinivasa Rao, DEE, NTTPS, Vijayawada	III B.Tech. students and Faculty
3	21/08/2018	Recent Trends in Industrial Practices	Sri. M.Srikanth, Manager, Blast Furnace Dept., RINL, Steel Plant, Visakhapatnam	III & IV B.Tech. students and Faculty

	perspective from mechanical engineering	Ltd-BLR			
5	Hybrid electric vehicle Technologies	Mr. Nagaraj Kannan, Managing Director DharmaSai Motors, Chennai	14-12-18	III B.Tech	55
6	Hybrid electric vehicle Technologies	Mr. Rakesh Malik, Manager, ARAI, Pune	14-12-18	III B.Tech	56
7	Hybrid electric vehicle Technologies	Prof. C. Shankar Ram, Professor in Engineering Design, IIT Madras.	13-12-18	III B.Tech	59
8	Hybrid electric vehicle Technologies	Mr.Suroju Ramakrishna, Manager R&D, Renault Nissan	13-12-18	III B.Tech	59
9	Batteries for electric vehicle Technologies	Dr. M. Venkateswarulu AGM-Technology Centre Amara Raja Batteries-Tirupathi	13-12-18	IIB.Tech	66
10	Hybrid electric vehicle Technologies	Mr. RajendraKhile Dy.General Manager Renault Nissan-Chennai	12-12-18	III B.Tech	65
11	Hybrid electric vehicle Technologies	Mr.GNischal Design Engineer, R&D Mercedes Benz-BLR	12-12-18	III B.Tech	62
12	Hybrid electric vehicle Technologies	Mr. YogeshNagendrian Team leader Renault Nissan-CHENNAI	12-12-18	II B.Tech	63
13	Hybrid electric vehicle Technologies	Prof K Munshi, Director, Industrial design centre,IIT Mumbai	11-12-18	III B.Tech	62
14	Hybrid electric vehicle Technologies	Prof SomanathSen Gupta IIT Kharagpur	11-12-18	II B Tech	60
15	Hybrid electric vehicle Technologies	Prof K Munshi, Director, Industrial design centre, IIT Mumbai	11-12-18	II B Tech	60
16	Hybrid electric vehicle Technologies	Dr. M V Uchgoankar, Manager, Hybrid vehicle division, ARAI-Pune	11-12-18	III B.Tech	60
17	Awareness on GATE	Mr. Vijay Shastry, GATE Academy	13-07-18	III B.Tech	30
18	Interactive Session	Mr.NatwarKadal Hyundai motor group	23-06-18	IV B.Tech	150

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19	Orientation Programme-B Tech Guru	G.Prashant Kumar, Consultant, B.Tech Guru	19-06-18	II B.Tech	60
<b>Academic Year 2017-18</b>					
1	Competencies required for early Professionals	Mr. K. Pradeep Kumar, Vice President-Coromandel, Hyderabad	13-03-18	III B.Tech	60
2	HRD	Mr. V.Shashank, Solenis, Hyderabad	17-02-18	III. B Tech	70
3	Maxwell's Equations & Recent Trends in IC Engines	Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune	16-10-17	II B.Tech	200
4	Civil Services Examinations	Mrs. Renuka, Senior Official, Govt. of A.P.	09-08-17	I-IV B.Tech	150
5	Application of Renewable Energy for Rural Development	AISECT University, Bhopal Village, MENDUA, Post, Bhojpur, M.P.	04-08-17	II B.Tech	153
6	Airports of the Future-A Multi-disciplinary Approach for the Design and Management of Airport Terminals	Professor and Project Director-Airports of the Future, School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology(QUT), Brisbane, Australia	01-08-17	III B.Tech	155
8	1) 5S 2) Lean Production 3) Push and Pull Production system 4) MOST (Maynard Operation Sequence Technique	Mr. D. Uma Maheswara Rao, Manager, Industrial Engineering, Uniparts India Limited, Visakhapatnam	21-07-17	III B.Tech	150
9	IGCC- a Cleaner way to produce	Mr. S. Rajeswar Engineer, GE	07-07-17	IV B.Tech	130

[Type here]

## GUEST LECTURES ARRANGED

AY: 2018-19



1) Interactive session with III B TECH II semester students with Mr.Senthil Prakash from KIA MOTORS on 30-03-2019



2) 'GATE – Orientation' by Mr. Negi on 25-02-2019 for III B TECH II semester students



3) Guest lecture on 'Aerospace engineering A perspective from mechanical engineering' by Mr. S S Raju-Vice President-Verisim Tech Pvt Ltd-Bangalore on 22-02-2019 for III B TECH II semester students

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VIJAYARAM NAGAR CAMPUS, CHINTALAVALLASA, VIZIANAGARAM – 535005

Ph: 08922-241038, Fax: 08922-241014

E-mail: [mechhod.mvgr@gmail.com](mailto:mechhod.mvgr@gmail.com) , [mechhod@mvgrce.edu.in](mailto:mechhod@mvgrce.edu.in)

Web: [www.mvgrce.edu.in](http://www.mvgrce.edu.in)



4) Guest lecture on ‘Aerospace engineering A perspective from mechanical engineering’ by Mr. S S Raju-Vice President-Verisim Tech Pvt Ltd-BLR on 25-12-2018 for II B TECH II semester students



5) Guest lecture on ‘Hybrid Electric Vehicle Technology- Motors aspect’ by Mr. Nagaraj Kannan, MD,Dharma Sai Motors, Chennai on 14-12-2018 for III B TECH II semester students



6) Guest lecture on ‘Hybrid Electric Vehicle Technology – Materials’ by Mr. Rakesh Malik, Manager, ARAI, Pune on 14-12-2018 for III B TECH II semester students



7) Guest lecture on ‘Hybrid Electric Vehicle Technology – Controlling aspects’ by Prof. C. Shankar Ram, Professor in Engineering Design, IIT Madras on 13-12-2018 for III B TECH II semester students



8) Guest lecture on ‘Hybrid Electric Vehicle Technology – Latest developments’ by Mr. Mr.Suroju Ramakrishna, Manager R&D, Renault Nissan on 13-12-2018 for III B TECH II semester students



9) Guest lecture on ‘Hybrid Electric Vehicle Technology - Batteries’ by Mr. Dr. M. Venkateswarulu AGM-Technology Centre Amara Raja Batteries-Tirupathi on 13-12-2018 for II B TECH II semester students



10) Guest lecture on ‘Hybrid Electric Vehicle Technology’ by Mr. Rajendra Khile Dy.General Manager Renault Nissan-Chennai on 12-12-2018 for III B TECH II semester students



11) Guest lecture on ‘Hybrid Electric Vehicle Technology - Design’ by Mr.G Nischal Design Engineer, R&D Mercedes Benz-BLR on 12-12-2018 for III B TECH II semester students

12) Guest lecture on ‘Hybrid Electric Vehicle Technology’ by Mr. Yogesh Nagendrian Team leader Renault Nissan-CHENNAI on 12-12-2018 for II B TECH II semester students



13) Guest lecture on 'HEVT' by Prof K Munshi, Director, Industrial design centre, IIT Mumbai on 11-12-2018 for III B TECH II semester students

14) Guest lecture on 'Hybrid Electric Vehicle Technology' by Prof Somanath Sen Gupta IIT Kharagpur on 11-12-2018 for II B TECH I semester students



15) Guest lecture on 'Hybrid Electric Vehicle Technology' by Prof K Munshi, Director, Industrial design centre, IIT Mumbai on 11-12-2018 for II B TECH II semester students



16) Interactive session on 'Ever of GATE' with Mr. Mr. Vijay Shastry, from GATE Academy on 13-07-2018 for III B.Tech I semester students.



17) Interactive session with Mr. Mr.Natwar Kadal, Hyundai motor group, on 23-06-2018 for IV B. Tech I semester students.

**AY 2018-19**

## Guest lectures

AY 2018-19

S.No.	Title	Resource person	Date	Target audience
1	Antennas	Dr. K.C.B. Rao Professor & HOD , UCEV, JNTUK, VZM	22.02.19	II & III years B.Tech
2	VLSI	Mr. R.V. Kiran Kumar, NSTL, Visakhapatnam	14.12.18	IV year B.Tech
3	Telecommunications	Sri M. Bhagavan Prasad, S.D.E.-EETP and Installations, BSNL Telephone Exchange, Visakhapatnam	22.08.18	II year B.Tech

### 1. Antennas



Dr. K.C.B. Rao, Professor & HOD , UCEV, JNTUK, VZM had delivered a guest lecture on Antennas.

#### List of Students attended

S. No.	Regd.No	Name of the Student
1	17331A0401	ABHIMAN CHOWDHARI
2	17331A0402	AISHWARYA REDNAM
3	17331A0403	AKHIL SARIPILLI

4	17331A0409	ATCHUTHA VENKATA S S L SUKRASH KUMAR
5	17331A0411	AVUGADDI ASHOK VARDHAN
6	17331A0412	B V SAI SUMANTH
7	17331A0413	BANDARU SAI TEJA
8	17331A0414	BANGARI DASWANTH
9	17331A0415	BANGARI NANI
10	17331A0416	BARU LEELA SAI KIRAN
11	17331A0417	BATTINA PAVAN KUMAR
12	17331A0418	BATTULA SHALINI
13	17331A0419	BIRLANGI JEEVAN
14	17331A0420	BOBBADI ASWANI KUMAR
15	17331A0421	BODDALA MADHU
16	17331A0422	BODU LEELADHAR
17	17331A0423	BOMMISSETTY BHARGAV DHARMA TEJA
18	17331A0424	BORRA RAMYA
19	17331A0425	BOWRIBILLI RENUKA
20	17331A0445	DOPA ALEKYA
21	17331A0446	DUMPALA DILEEP KUMAR
22	17331A0447	DUMPALA SRIKANTH
23	17331A0448	DUNGALA SRI DEVI
24	17331A0449	DUVVADA CHANDRA SEKHAR
25	17331A0450	ELURU PAVANKUMAR
26	17331A0457	GRANDHI SWATHI
27	17331A0458	GULLIPALLI MEHAR GREESHMA
28	17331A0459	GULLIPALLI VENKATA SAI TEJA
29	17331A0460	GURE VINAY
30	17331A0461	INDUKURI SRI JAHNAVI
31	17331A0462	INKOTI NAGA KISHORE
32	17331A0463	IPPILI NAGARJUNA
33	17331A0464	JAGARAPU SURYA AMRUTHA
34	17331A0465	JAMI BHARATH KUMAR
35	17331A0466	JAMPANA ROHIT VARMA
36	17331A0467	JANAKOTI SOMNATH ACHARY
37	17331A0468	JUMMU JESSI
38	17331A0476	KARRI SUSHMA
39	17331A0477	KASA SAI JAYA KRISHNA
40	17331A0478	KASPAMAKKUYA VIJAYA BHARGAVI
41	17331A0479	KATTA CHAITANYA
42	17331A0480	KENGUYA GANESH
43	17331A0481	KOLIMALA DHANASREE
44	17331A0488	LANKA SANJAY
45	17331A0489	LEKKALA BHARATKUMAR
46	17331A0494	MANDAPAKA SRI SAI RAM

47	17331A0495	MANDAPATI SRAVYA RAJ
48	17331A0496	MANTINA SAI SURYA SANKAR
49	17331A0497	MARADA AJAY
50	17331A0498	MAVURI YASWANATH
51	17331A0499	MEDAPATI GOWTHAMI
52	17331A04A9	NABHA ARUN KUMAR
53	17331A04B5	NAMMI JANAKI RAM
54	17331A04B6	NAUPADA NIHARIKA
55	17331A04B7	NAVAGANA BINNY KARTHIK
56	17331A04B8	NIDIGATTU JAYALAKSHMI
57	17331A04B9	NULAKAJODU DEEPAK
58	17331A04C8	PENDURTHI BHANU PRAKASH
59	17331A04D4	PILLA NAVYA
60	17331A04D5	PILLA VENKATESH
61	17331A04D6	PILLALAMARRI PRAVEEN
62	17331A04D7	PINNINTI GEETHANJALI
63	17331A04D8	PITTA MOHINDAR REDDY
64	17331A04D9	PODIPIREDDI HEMANTH
65	17331A04E0	POLA LOKESH
66	17331A04E1	POLUMURU APARNA
67	17331A04E2	POTNURU RAMANI SAI KISHORE
68	17331A04F7	SIRIPURAPU HIRTHIK RAHUL
69	17331A04F8	SIRUVURI RAMYA BHARATHI
70	17331A04F9	SUNKARI VAMSI
71	17331A04G0	SUPRIYA BONTALAKOTI
72	17331A04G1	TADEPALLI JYOTHSNA
73	17331A04G2	TANGI AJITH
74	17331A04G3	TEKI SATYA SREE
75	17331A04G4	TENNETI SAI PREETHAM
76	17331A04G5	THUMPADA SAI PRIYA
77	17335A0424	POTNURU ISAACDANIEL
78	18335A0401	ALLAMSETTI PREETHI
79	18335A0402	BANDARU JAYA SHANKAR
80	18335A0403	BOMMUNA YUNI SULOCHANA
81	18335A0404	BORA NAGA NEEHARIKA
82	18335A0405	CHALLA ROSHINI
83	18335A0406	DENDUKURI TEJASWINI
84	18335A0407	DRAKSHARAPU DIVAKAR
85	18335A0414	KAVALAPATI VISALAKSHI
86	18335A0415	KEDARISETTI SAINADH
87	18335A0416	KETHA ANUSHA VARDHINI
88	18335A0417	KONATHALA VAMSI
89	18335A0422	PETLA MOHAN KRISHNA

90	18335A0429	UDAY SAI KIRAN GANDIREDDY
91	18335A0430	VARRI SRAVANI
92	18335A0431	VELICHETI RAMANI
93	18335A0432	VILLURI HEMANTH SAI SATYENDRA
94	18335A0433	YAMALA SYAMSUNDAR
95	18335A0434	YELAGADA HARSHAVARDHAN
96	15331A0491	KOTA USHA KIRAN
97	16331A0402	ABHILASH BAGGAM
98	16331A0403	AKULA DURGARAO
99	16331A0427	CHARAN CHILUKOTI
100	16331A0428	CHEEMALAPATI VENKATA HIMA BINDU
101	16331A0429	CHILUKOTI LASYA PRIYA
102	16331A0430	CHINTALAPUDI AKHIL
103	16331A0431	CHINTALA SAIRAJESH
104	16331A0432	CHODA SEETHARAMNATH
105	16331A0433	DANNANA ROJA
106	16331A0434	DANTHULURI SIVA RAMA KRISHNAMURTHY RAJU
107	16331A0435	DARIMISSETTI ATCHYUTH KUMAR
108	16331A0436	DEVARAPALLI MOUNIKA
109	16331A0437	DEVU SRINIVAS
110	16331A0438	DHATRI ROKKAM
111	16331A0439	DODDI AJAY KUMAR
112	16331A0441	DURGA SAI KUMAR
113	16331A0442	DURGA SRAVANI SURAVARAPU
114	16331A0443	EDUBILLI SATYA
115	16331A0444	EEGALA NARASINGA RAO
116	16331A0445	GADHAM HARSHITA
117	16331A0453	GODABA PRASANNA SRAVYA
118	16331A0454	GODUGULA SURYANARAYANA MURTHY
119	16331A0455	GORLE SAI PRAGNA
120	16331A0456	GUDE PRAVALLIKA
121	16331A0457	GUNDE RICHARD SON
122	16331A0458	HARSHAVARDHAN GADAM
123	16331A0459	IDDUMU UMAGAYATRI
124	16331A0460	ILAPAKURTHY VENKATA MANIKANTA SURYA VIKASH
125	16331A0461	INTI NAGA VENKATA SUJANA
126	16331A0462	IRRINKI PINAKAPANI
127	16331A0463	JADUGURU HARIKA
128	16331A0464	JALAMANCHILI JAHNAVI
129	16331A0465	JAMMANA DILIP KUMAR
130	16331A0473	KANDUKURI PAVANI

131	16331A0474	KANIGIRI DHANA LAKSHMI BHARGAVI
132	16331A0475	KANTAMSETTI SIRI CHANDANA
133	16331A0476	KARIMELLI ESWARA SAI PRASOON
134	16331A0477	KARRI SRI BHARATHI
135	16331A0478	KATTAMURI KEERTHANA
136	16331A0479	KEDARI MOUNIKA
137	16331A0480	KODI SRIKAR
138	16331A0481	KODURU SATYA KIRAN
139	16331A0482	KOMMU MANOHAR JOY
140	16331A0483	KONA VENKATA UTTEJ
141	16331A0484	KOTA RAHUL RATHAN
142	16331A0485	KOTA SURESH
143	16331A0486	KURUMETI LOKESH
144	16331A0487	LENKA SURESH
145	16331A0489	MADAGALA SAI TEJA
146	16331A0490	MADATALA HARI TEJA
147	16331A0491	MAJJI VINAY KUMAR
148	16331A0492	MAMIDI SAI SURYA BHANU TEJA
149	16331A0493	MAMIDI VENKATA SAI
150	16331A0494	MANDAPATI VENKATA SURYA NARAYANA RAJU
151	16331A0495	MANDARAPU DIMPLE RAMYA
152	16331A04A2	MOHAMMAD IMRAN KHAN
153	16331A04A3	MOLLI LAKSHMI SRAVANTHI
154	16331A04A4	MUDUNDI SUNIL VARMA
155	16331A04A5	MULAGAPAKA SAI KRISHNA TEJA
156	16331A04A6	MUMMANA LAKSHMI PRIYANKA
157	16331A04A7	NADIMPALLI SATYENDRA VARMA
158	16331A04A8	NAKKINA SAI TEJA
159	16331A04B4	NAVUDU RADHIKA
160	16331A04B5	NIDUGANTI CHANDRIKA
161	16331A04B6	NOLLU RAJESWARI
162	16331A04B7	P SURAJ VARMA
163	16331A04B8	PAKALAPATI VENKATA NARAYANA MURTHY RAJU
164	16331A04B9	PALAKA HARATHI
165	16331A04C0	PAMPANA PREMCHAND
166	16331A04C5	PATABALLA V S NITHISH
167	16331A04C7	PATHURI HEMANTH
168	16331A04C8	PATRO KAVYA
169	16331A04C9	PEKALA TEJA
170	16331A04D0	PENDYALA BHARATHI
171	16331A04D1	PENDYALA BHARGAVI
172	16331A04D2	PENUMATHSA SUDEER

173	16331A04D3	PILLA ROHIT
174	16331A04D4	PITTADA HIMA BINDU
175	16331A04D5	PODILAPU HEMANTH RAMESH SWAMY
176	16331A04D6	POTHALA NAVYA CHANDRIKA
177	16331A04D8	POTNURU LAKSHMI NAGESH
178	16331A04D9	POTTABOINA JAYA SAI RAM
179	16331A04E0	PUDU LAKSHMI PRASANNA
180	16331A04E1	PULIPATI VIKAS
181	16331A04E2	R SANDEEP
182	16331A04E3	RAJA SAGI NARENDRA VARMA
183	16331A04E4	RAVI TEJA PUDU
184	16331A04E5	REDDIPALLI YASWANATH SAI
185	16331A04E6	REGIDI DIVYA SUSHMITHA
186	16331A04F2	SAI NARESH PAKKI
187	16331A04F3	SAMBANGI ACHYUT KUMAR
188	16331A04F4	SAMBANGI PRASANTHI
189	16331A04F5	SHAIK ANWAR HUSSAIN
190	16331A04F6	SHAIK MOULALI NAZEER
191	16331A04F7	SHAIK SHADULLA
192	16331A04F8	SINGISETTI SWATHI CHAITANYA
193	16331A04F9	SIRIKI DAMODARA SAI KUMAR
194	16331A04H7	VISARAPU PUJITHA
195	16331A04H8	VOONA PRIYANKA
196	16331A04H9	VYTTLA BHARGAV SAI
197	16335A0412	GONDELA KEZIA SUPRIYA
198	17335A0401	AAVALA NAGENDRA BABU
199	17335A0402	ADARI NAGA VENKATA APPALA NAIDU
200	17335A0404	ATAVA NAVEEN KUMAR
201	17335A0405	BAASINA NAVEEN KUMAR
202	17335A0407	BOTSA MOHINI
203	17335A0408	CHALLA RAM BHARGAV REDDY
204	17335A0410	CHILAKALAPALLI DEDEEPIYA
205	17335A0411	CHUKKA GUNA SEKHAR

## 2. VLSI



Mr. R.V. Kiran Kumar, NSTL, Visakhapatnam had delivered a guest lecture on VLSI.

### List of Student attended

S.No	Regd. No	Name of the Student
1	15331A0401	AKULA SRIKANTH
2	15331A0402	ALAMANDA SATYAVATHI
3	15331A0403	ANNAVARAPU NAVEEN
4	15331A0404	ANUSHA ALAJANGI
5	15331A0405	APARNA RATH
6	15331A0411	BAMMIDI MANISH RAJA
7	15331A0413	BATHINI MOHIT PRASAD
8	15331A0414	BATTULA MOHANA KRISHNA
9	15331A0415	BEHARA SRAVANI
10	15331A0416	BELLANA RAJA NANDHINI
11	15331A0417	BODDA JYOSHNA
12	15331A0418	BODDEDA HARSHA SREEVARDHAN RAJ
13	15331A0419	BOTCHA MEGHANA
14	15331A0420	BUDI SAI CHAITANYA
15	15331A0421	CHILUKOTI VENKATA DINESH KUMAR
16	15331A0422	CHINNA SALLANGI
17	15331A0423	CHINTA SUBHASH CHANDRA
18	15331A0424	CHINTALAPATI P S B CHIRANJEEVI VARMA
19	15331A0425	CHINTHA MARYRANI
20	15331A0426	CHIPPADA PRITHVI
21	15331A0427	CHITTELLA SAI AKHIL
22	15331A0428	CHITTI GURUSAINATHREDDY
23	15331A0429	CHITTIMOJU SAI MANOJ
24	15331A0430	DAMTHAMSETTI BHAVITHA
25	15331A0431	DASARI MANOHAR
26	15331A0432	DATLA MOUNIKA
27	15331A0433	DEVU SAI PRATHYUSHA

28	15331A0439	EARLA TARUN KUMAR
29	15331A0440	GALLA PRASANNA KUMARI
30	15331A0441	GANAPATHIRAJU SOWNDARYA
31	15331A0442	GANIVADA KIRAN
32	15331A0443	GEDALA PAVAN VENKATA SAI KALYAN
33	15331A0444	GEDELA LAXMANA RAO
34	15331A0445	GODDI GANESH RAMACHANDRA RAO
35	15331A0446	GONDELA SUNEEL KUMAR
36	15331A0447	GORJA LAKSHMI PRIYA
37	15331A0448	GOTTEMUKKALA NIKHIL VARMA
38	15331A0449	GRANDHI LAHARI
39	15331A0450	GUDEPU DINESH
40	15331A0451	GUDLA VARUN KUMAR GUPTA
41	15331A0452	GUNTA ASHITH DANNY
42	15331A0453	GUSIDI LAKSHMI PRASANNA
43	15331A0454	GUTTI PRAVALLIKA
44	15331A0455	INDUGUBILLI BHARATI
45	15331A0456	JAMI MANASA
46	15331A0464	KALAGARLA SIVA SANKAR
47	15331A0465	KALYANA SWETHA
48	15331A0466	KANCHARLA INDRANI
49	15331A0467	KANDIPILLI VENKATA LOKESH
50	15331A0468	KANDREGULA SHIVA CHAITANYA
51	15331A0469	KANTAMSETTI ABHISHEK
52	15331A0470	KANURU SAI MANIKANTA
53	15331A0471	KAPPALA SANDHYA
54	15331A0472	KAPU TEJESWARI
55	15331A0473	KARRI SANTOSHI SAI SAMHITA
56	15331A0474	KASINA VAMSI KARTEEK
57	15331A0475	KAYITHA HARIKRISHNA
58	15331A0476	KETHAVARAPU MANJUSHA
59	15331A0477	KETHIREDDY TEJASWINI
60	15331A0478	KILAPARTHI SARANYA
61	15331A0479	KIRAN MOHANTY
62	15331A0480	KODUKULLA VENKATA KRISHNAVAMSI
63	15331A0481	KOLAKALURI SHAINY GLORY
64	15331A0482	KOLAPALLI SANTOSH MADHURI
65	15331A0483	KOLLI VENKATA LAKSHMI
66	15331A0492	KUPPILI RANJIT KUMAR
67	15331A0493	KURIVELLA SAI SUNEEL
68	15331A0494	LANKAVALASA YAMUNA
69	15331A0495	LAVUDI SUNITHA PATNAIK
70	15331A0496	LENKA ANIL KUMAR
71	15331A0497	LOLABHATTU UMA SHANKAR RAJU
72	15331A0498	MADDULA JAYNEEL
73	15331A0499	MADDULA SATISH KRISHNA
74	15331A04A0	MAHANTHI JOTHSANA DEVI

75	15331A04A1	MANCHUPALLI SAI KUMAR
76	15331A04A2	MARISSETTY BALA NAGENDRA
77	15331A04A3	MEESALA TILAK
78	15331A04A4	MERUGU DURGA PRASANTH
79	15331A04A5	MIDATHANA PUJITHA
80	15331A04A6	MUHAMMAD MATHEENULAIN
81	15331A04A7	MUNUPATRULA SIDDHARTH
82	15331A04A9	NATHANI VISHNU TEJA
83	15331A04B0	NEBARTHI SRINIVAS DEEPAK
84	15331A04B1	NEMALIPURI KAVYA
85	15331A04B3	NETTEM NIKHIL
86	15331A04B4	NOKKU SEKHAR
87	15331A04B5	PALA TEJESWAR
88	15331A04B6	PALLA RAVI
89	15331A04B7	PANCHADA GOPALAKRISHNA
90	15331A04B8	PANIGRAHI HARIPRIYA
91	15331A04B9	PATNANA MADHURI
92	15331A04C0	PECHETTI HARI CHANDANA
93	15331A04C1	PEDADA INDUMATHI
94	15331A04C2	PEDAGADI SAI KRISHNA
95	15331A04C3	PEDAPENKI TANUJA
96	15331A04C4	PENTAKOTA SRINIVASU
97	15331A04C5	PONNADA KASTHURI
98	15331A04C6	PRAGADA LALITHA KUMARI
99	15331A04C8	PYDI JASWANTH
100	15331A04C9	PYDISETTY GAYATRI
101	15331A04D0	PYLA UJWALA
102	15331A04D1	RAJAMUDILI SAMPATH KRISHNA
103	15331A04D2	RAJAPU MONICA
104	15331A04D3	RALLAPALLI VENKATA SAI HIMA BINDU
105	15331A04D4	RAMBHA SARATH CHANDRA ROOPESH
106	15331A04D5	RAYAVARAPU GNANA LAKSHMI DEEPIKA
107	15331A04D6	REDDI RENUKA RAJITHA
108	15331A04D7	SABBAVARAPU MANI KUMAR
109	15331A04D8	SAGI ANILA
110	15331A04D9	SAGI NAVEEN
111	15331A04E0	SAGI VENKATA SANTOSH NIKHITA
112	15331A04E7	SHAKEENA NOORANI
113	15331A04E8	SHATABDI MAHATA
114	15331A04E9	SIDDA MADHU KIRAN
115	15331A04F0	SINGAMPALLI SANATH PRAMODH
116	15331A04F1	SOMPALLI TEJASWI
117	15331A04F2	SRUNGARAPU CHAITANYA KUMAR
118	15331A04F3	SUBNIVEESU AVINASH
119	15331A04F4	SURATHA GURU SWAROOP
120	15331A04F5	TADEPALLI SNEHA RAJESHWARI
121	15331A04F6	TAMIRI LAKSHMI NAVEENA

122	15331A04F7	TATA REDDY SATHI
123	15331A04F8	TEELLA MANIKANTA
124	15331A04G0	THOTA DEVI
125	15331A04G1	UDDARAJU VINEETHA THRINETHRI
126	15331A04G2	UPPULURI SREE VAISHNAVI
127	15331A04G5	VANAPALLI SWETHA SREE
128	15331A04G6	VANGAPANDU LALITHA MANASA
129	15331A04G7	VANUMU MANI DEEP
130	15331A04G8	VANYAMREDDY KRISHNA SAI ARAVIND
131	15331A04G9	VARRE GANESH KUMAR
132	15331A04H0	VASAPILLI LAKSHMAN RAO
133	15331A04H1	VASIREDDY POOJITHA
134	15331A04H2	VEERAVALLI USHA RANI
135	15331A04H3	VEERNI PRAVEEN KUMAR
136	15331A04H4	VEMALI ANAND KUMAR
137	15331A04H5	YALLA SAI RAMESH
138	15331A04H6	YELLABILLI AKHIL
139	15331A04H7	MAHANTHI HARYAKSHA ROY
140	15331A04H8	PERLI THERISA SUHASINI
141	15331A04H9	NAPRI VIKAS
142	15331A04I0	MERUVA KODANDA DEVI
143	15335A0419	KOLA SAILATHA
144	16335A0401	BAMMIDI GOPALA KRISHNA
145	16335A0402	BHASURU SAI PRAKASH
146	16335A0403	CHAVALI UGENDRA GOPI
147	16335A0404	CHEEKATI GOWTHAMI
148	16335A0406	DEVARAKONDA JOGIRAJU
149	16335A0407	DEVAVARAPU DEVENDRA
150	16335A0408	DORA KARTHIK
151	16335A0409	DRAKSHRAPU SIVA
152	16335A0410	DUGGAPU BALA BHAVANI
153	16335A0411	GOLAGANI AKHIL
154	16335A0413	GREESHANT CHANDAKA
155	16335A0414	JAYA LOCHERLA
156	16335A0415	JINNALA AKHIL
157	16335A0416	JITESH KUMAR SAHOO
158	16335A0417	KADAMATI MOHANA VALLI
159	16335A0419	KELLA YAMINI
160	16335A0421	KOTTHAPALLI DIVYA
161	16335A0422	MAMMULA RAVALI
162	16335A0423	MANIKYAM ASWINI KUMARI
163	16335A0424	MANIKYAM CHALAPATHI
164	16335A0425	MEESALA SIVA
165	16335A0426	MOHAMMAD ARSHAD ALI
166	16335A0427	PALURI JANARDHANA REDDY
167	16335A0428	PAPPU HEMANTH
168	16335A0429	REVATHI ALAMURU

169	16335A0430	SEETA VENKATA SWAMY NAIDU
170	16335A0431	SESETTI SAI KUMAR
171	16335A0432	URITI RAVI TEJA
172	16335A0434	VUPPALA NAGA LAKSHMI ABINAYA SAHITHI
173	16335A0435	YELLAPRAGADA VENKATA SAI SOWMYA
174	16335A0436	KARETI SAI NIKHIL REDDY

### 3. Telecommunications



Sri M. Bhagavan Prasad, S.D.E.-EETP and Installations, BSNL Telephone Exchange, Visakhapatnam had delivered a guest lecture on Telecommunications.

#### List of Students attended

S. No.	Regd.No	Name of the Student
1	16331A04D7	POTNURU AJAY KUMAR
2	17331A0401	ABHIMAN CHOWDHARI
3	17331A0402	AISHWARYA REDNAM
4	17331A0403	AKHIL SARIPILLI
5	17331A0409	ATCHUTHA VENKATA S S L SUKRASH KUMAR
6	17331A0410	AVINASH SABOTO
7	17331A0411	AVUGADDI ASHOK VARDHAN
8	17331A0412	B V SAI SUMANTH
9	17331A0413	BANDARU SAI TEJA
10	17331A0414	BANGARI DASWANTH
11	17331A0415	BANGARI NANI
12	17331A0416	BARU LEELA SAI KIRAN
13	17331A0417	BATTINA PAVAN KUMAR
14	17331A0418	BATTULA SHALINI
15	17331A0419	BIRLANGI JEEVAN
16	17331A0420	BOBBADI ASWANI KUMAR
17	17331A0421	BODDALA MADHU
18	17331A0422	BODU LEELADHAR
19	17331A0423	BOMMISSETTY BHARGAV DHARMA TEJA

20	17331A0424	BORRA RAMYA
21	17331A0425	BOWRIBILLI RENUKA
22	17331A0426	BOYINA NAVEEN
23	17331A0435	CHINTALAPUDI SONY RAMYA
24	17331A0436	CHINTAPALLI SRAVANKUMAR
25	17331A0437	CHIPPADA MEGHANA
26	17331A0438	DANTHULURI AVINASH VARMA
27	17331A0439	DANTULURI SAMBAMURTHI RAJU
28	17331A0440	DARA PREETHI
29	17331A0441	DASI EMMANUEL DAWSON
30	17331A0442	DESETTI LOKESH
31	17331A0443	DODDI SWAPNA
32	17331A0444	DOGGA KEERTHI
33	17331A0445	DOPA ALEKYA
34	17331A0446	DUMPALA DILEEP KUMAR
35	17331A0447	DUMPALA SRIKANTH
36	17331A0448	DUNGALA SRI DEVI
37	17331A0449	DUVVADA CHANDRA SEKHAR
38	17331A0450	ELURU PAVANKUMAR
39	17331A0457	GRANDHI SWATHI
40	17331A0458	GULLIPALLI MEHAR GREESHMA
41	17331A0459	GULLIPALLI VENKATA SAI TEJA
42	17331A0460	GURE VINAY
43	17331A0461	INDUKURI SRI JAHNAVI
44	17331A0462	INKOTI NAGA KISHORE
45	17331A0463	IPPILI NAGARJUNA
46	17331A0464	JAGARAPU SURYA AMRUTHA
47	17331A0465	JAMI BHARATH KUMAR
48	17331A0466	JAMPANA ROHIT VARMA
49	17331A0467	JANAKOTI SOMNATH ACHARY
50	17331A0468	JUMMU JESSI
51	17331A0476	KARRI SUSHMA
52	17331A0477	KASA SAI JAYA KRISHNA
53	17331A0478	KASPAMAKKUVA VIJAYA BHARGAVI
54	17331A0479	KATTA CHAITANYA
55	17331A0480	KENGUVA GANESH
56	17331A0481	KOLIMALA DHANASREE
57	17331A0482	KOLLA SRAVANTHI
58	17331A0483	KOPPULA ANAND CHANDRA
59	17331A0484	KOTNI DHARAN KUMAR
60	17331A0485	KOYYA KRUSHNA
61	17331A0486	KUPPANNAGARU S S V S NIKHIL PATNAIK
62	17331A0487	LANDA SWETHA
63	17331A0488	LANKA SANJAY
64	17331A0489	LEKKALA BHARATKUMAR

65	17331A0494	MANDAPAKA SRI SAI RAM
66	17331A0495	MANDAPATI SRAVYA RAJ
67	17331A0496	MANTINA SAI SURYA SANKAR
68	17331A0497	MARADA AJAY
69	17331A0498	MAVURI YASWANTH
70	17331A0499	MEDAPATI GOWTHAMI
71	17331A04A0	MINDI SARAYU
72	17331A04A1	MITTIREDDY NAVEEN KUMAR
73	17331A04A2	MITTISILA JOSEPH RAJ KUMAR
74	17331A04A3	MODUKURI ATCHYUTA SURYA NARAYANA RAJU
75	17331A04A4	MOHAMMAD GULAM ALI KHAN
76	17331A04A5	MOKA KALYAN
77	17331A04A6	MUDADLA RAVI PRASAD
78	17331A04A7	MUKALA BHAVYASRI
79	17331A04A8	MUPPANA MANOJ KUMAR
80	17331A04A9	NABHA ARUN KUMAR
81	17331A04B5	NAMMI JANAKI RAM
82	17331A04B6	NAUPADA NIHARIKA
83	17331A04B7	NAVAGANA BINNY KARTHIK
84	17331A04B8	NIDIGATTU JAYALAKSHMI
85	17331A04B9	NULAKAJODU DEEPAK
86	17331A04C0	PALISETTI RAHUL
87	17331A04C1	PALISETTY SOWJANYA
88	17331A04C2	PANASA VENKATESH NAIDU
89	17331A04C3	PANDIRI PERIN KUMAR
90	17331A04C4	PANDRANKI GOWTHAM
91	17331A04C5	PASUPUREDDI ROSHINI
92	17331A04C6	PATHIVADA HARI PRASAD
93	17331A04C7	PAVITRA MENTADA
94	17331A04C8	PENDURTHI BHANU PRAKASH
95	17331A04C9	PENDYALA INDRANI
96	17331A04D0	PENTA MANASA
97	17331A04D1	PENTAKOTA RAMMADHU
98	17331A04D2	PENUMALLU LAVANYA REDDY
99	17331A04D3	PENUMATSA ANIL VARMA
100	17331A04D4	PILLA NAVYA
101	17331A04D5	PILLA VENKATESH
102	17331A04D6	PILLALAMARRI PRAVEEN
103	17331A04D7	PINNINTI GEETHANJALI
104	17331A04D8	PITTA MOHINDAR REDDY
105	17331A04D9	PODIPIREDDI HEMANTH
106	17331A04E0	POLA LOKESH
107	17331A04E1	POLUMURU APARNA
108	17331A04E2	POTNURU RAMANI SAI KISHORE

109	17331A04E3	POTNURU VENKATA HARSHITH GOPAL
110	17331A04E4	PRASANNA KUMARI SANKILI
111	17331A04E5	PRIYA SATYADEEP
112	17331A04E6	PULAMARASETTI CHANDRA SEK HAR
113	17331A04E7	REDDY GIRIDHAR RAO
114	17331A04E8	SABBATI SUNITHA
115	17331A04E9	SAKILE PRUDHVIRAJ
116	17331A04F0	SAROJA SRUTHI RAJANALA
117	17331A04F1	SEEPANA LALITYA
118	17331A04F2	SHAIK BASHEER
119	17331A04F3	SHAIK SABEER BASHA
120	17331A04F4	SHAIK SANA AHMED
121	17331A04F5	SHIVANI PANDA
122	17331A04F6	SIMIDI NIKHIL
123	17331A04F7	SIRIPURAPU HIRTHIK RAHUL
124	17331A04F8	SIRUVURI RAMYA BHARATHI
125	17331A04F9	SUNKARI VAMSI
126	17331A04G0	SUPRIYA BONTALAKOTI
127	17331A04G1	TADEPALLI JYOTHSNA
128	17331A04G2	TANGI AJITH
129	17331A04G3	TEKI SATYA SREE
130	17331A04G4	TENNETI SAI PREETHAM
131	17331A04G5	THUMPADA SAI PRIYA
132	17331A04G6	TIRUMALADASU SRI GOWTHAMI
133	17331A04G7	TOLAPU VINODH KUMAR
134	17331A04G8	TUMUROTHU PRAVEEN
135	17331A04G9	VADDI KAVYA
136	17331A04H0	VAJRAPU PRIYANKA
137	17331A04H1	VANGALAPUDI NAVEEN
138	17331A04H2	VATAPALLI SAI RAMYA SREE
139	17331A04H3	VEDURUPARTHI V V SATYA SUMANTH
140	17331A04H4	VELAGALA SAI KOUSHIK KUMAR
141	17331A04H5	VEMAVARAPU SATISH KUMAR
142	17331A04H6	VIJJAPURAPU PARVATHI
143	17331A04H7	VOODIKALA NAVYA SREE
144	17331A04H8	VULUSU KIRAN KUMAR
145	17331A04H9	YEKULA PYDI GANGADHAR SAI SRINIVAS
146	17331A04I0	YENNI LAVANYA
147	17335A0420	MUNDURU NARAYANA RAO
148	17335A0424	POTNURU ISAACDANIEL
149	18335A0401	ALLAMSETTI PREETHI
150	18335A0402	BANDARU JAYA SHANKAR
151	18335A0403	BOMMUNAYUNI SULOCHANA
152	18335A0404	BORA NAGA NEEHARIKA
153	18335A0405	CHALLA ROSHINI

154	18335A0406	DENDUKURI TEJASWINI
155	18335A0407	DRAKSHARAPU DIVAKAR
156	18335A0408	DULAPU HIMABINDHU
157	18335A0409	GUTTU ASWINI
158	18335A0410	JAKKA VEERA VENKATA SURYA NARAYANA
159	18335A0411	YELLAPANTULA PAVAN KRISHNA
160	18335A0412	K NIRANJAN KRISHNA MOHAN
161	18335A0413	KASSETTI SHYAM KRISHNA CHAITANYA
162	18335A0414	KAVALAPATI VISALAKSHI
163	18335A0415	KEDARISETTI SAINADH
164	18335A0416	KETHA ANUSHA VARDHINI
165	18335A0417	KONATHALA VAMSI
166	18335A0422	PETLA MOHAN KRISHNA
167	18335A0429	UDAY SAI KIRAN GANDIREDDY
168	18335A0430	VARRI SRAVANI
169	18335A0431	VELICHETI RAMANI
170	18335A0432	VILLURI HEMANTH SAI SATYENDRA
171	18335A0433	YAMALA SYAMSUNDAR
172	18335A0434	YELAGADA HARSHAVARDHAN

## Department: CSE

### Criteria: 1.1.1

2018-19

### Guest Lectures arranged

Sno	Date	Title	Venue	Participants	Summary
1	23-06-2018	Python Season - 2	GodelLab, CSE, MVGRCE(A)	40	M.Vamsi Krishna, Asst. Prof., CSE, has delivered a hands-on session on basics of python programming to the students of CSE.
2	03-06-2018	Python Season - 2	GodelLab, CSE, MVGRCE(A)	40	M.Vamsi Krishna, Asst. Prof., CSE, has delivered a hands-on session on advanced python programming(OOPS, Data Visualization) to the students of CSE.
3	11/07/2018	Women Rock IT	Godel Lab,CSE,MVGRCE (A)	72	Mr. Subhajith Jagdev, Head Cisco Academy Support Center & ITC India has delivered a guest lecture on trending technologies and Cisco Academy to the students of CSE.
4	16/07/2018	Ethical Hacking	Godel Lab,CSE,MVGRCE (A)	120	Mr. Deepak Kumar Nath from Cisco and Trident technologies has trained the students of CSE on ethical hacking.
5	22-07-2018	WEB app development	Turing Lab,CSE,MVGRCE (A)	45	M.Vamsi Krishna, Asst. Prof., CSE has delivered a hands on lecture on 'Web App Development & IoT' to the students of CSE.
6	26/07/2018	iBootup IoT Series	Godel Lab,CSE,MVGRCE (A)	72	A Comprehensive IoT workshop was organized in association with AP Innovation Society.
7	27-10-2018	Empowering Villages - Freedom Box	Seminar Hall, CSE, MVGRCE(A)	30	M.Vamsi Krishna, Asst. Prof., CSE has delivered a talk on empowering the villages with technology to the students of CSE during a student club event.
8	11 – 02-2019	Block Chain & Data Security	MBA Seminar Hall, MVGRCE(A)\	35	M.Vamsi Krishna, Asst. Prof., CSE has delivered a guest lecture on 'Blockchain & Data Security' to the students of CSE during a Freedom Fest 2019 at MVGR.
9	09-03-2019	Virtual Labs	Turing Lab,CSE,MVGRCE (A)	90	IIT H's Virtual lab application was demonstrated to the students of CSE. Volunteers of IIITH has explained the features of virtual lab application and their support towards engineering learning.

**Academic Year (2018-19)**

S. No	Date	Name of the Expert	Designation	Name of the Organization	Topic of the lecture
1	15/02/2019	Prof. Man Mohan Sharma	Padma Vibhushan	ICT, Mumbai	Mile stones in chemical industry and contributions of chemical engineering
2	18/08/2018	Dr.Raman V.V.S.S.Nanduri	Director	Analys Labs Pvt Ltd., Visakhapatnam	Role of Chemical Engineers in Process Industries

**Academic Year (2018-19) S.No 1:**

**Title of the Guest Lecture:** Mile stones in chemical industry and contributions of chemical engineering

Solving important problems of chemical and process industries stimulated the creation of a new scientific discipline, chemical engineering, which apart from other disciplines includes firm theoretical foundations, core subjects taught to entering students, widely adopted textbooks and journals. The new discipline, at the beginning of the 20th century, provided a way of analyzing the wide variety of processes in terms of small "unit operations". Later, the largely empirical approach of the unit operations was broadened by molecular explanations of macroscopic phenomena. It was not long before chemical engineering extended the operation approach to chemical reaction engineering. At the same time, process optimization prompted the system approach. Instead of looking for details, higher levels of organization were recognized by synthesis. The use of computers has become the key element in process modeling and control. The methods of chemical engineering have extended to other fields, while the discipline keeps the same basis and characteristics. The changes on the global market stimulate new trends in research and education. Product development has become an important segment of the discipline, which presumes an integrated approach to the phenomena and processes at different time and length levels following the possible transfer from molecule to product at process level. This lecture mainly dealt with the development of this discipline, with a preview of the persons that contributed to the acceptance and propagation of the new concepts.

**Academic Year (2018-19) S.No 2:**

**Title of the Guest Lecture:** Role of Chemical Engineers in Process Industries

Chemical engineers translate processes developed in the lab into practical applications for the commercial production of products and then work to maintain and improve those processes. They rely on the main foundations of engineering: math, physics, and chemistry (though biology is playing an increasing role). The main role of chemical engineers is to design and troubleshoot processes for the production of chemicals, fuels, foods, pharmaceuticals, and biologicals, just to name a few. They are most often employed by large-scale manufacturing plants to maximize productivity and product quality while minimizing costs.

The aerospace, automotive, biomedical, electronic, environmental, medical, and military industries seek the skills of chemical engineers in order to help develop and improve their technical products, such as:

- Ultrastrong fibers, fabrics, and adhesives for vehicles
- Biocompatible materials for implants and prosthetics
- Films for optoelectronic devices

Chemical engineers work in almost every industry and affect the production of almost every article manufactured on an industrial scale. Some typical tasks include:

- Ensuring compliance with health, safety, and environmental regulations
- Conducting research into improved manufacturing processes
- Designing and planning equipment layout
- Incorporating safety procedures for working with dangerous chemicals
- Monitoring and optimizing the performance of production processes
- Estimating production costs

**GUEST LECTURES ORGANIZED FOR THE ACADEMIC YEAR  
2018-2019**

<b>S.no</b>	<b>Date</b>	<b>Resource Person</b>	<b>Organisation</b>	<b>Topic Delivered</b>
1	17.07.18	Prof. V. Raghunathan	CEO-GMR Varalakshmi Foundation, Bengaluru & Director-Schulich School of Business @ Hyderabad	Dr. Pusapati Ananda Gajapathi Raju Memorial Lecture
2	01.08.18	Mr. J. Srinivasa Raju, Expert	T&P Hub, Visakhapatnam	Campus Placement Process
3	23.08.18	Mr. Abdulla	Conduira, Visakhapatnam	Softskills
4	17.09.18	Mr. Viswanath Ch.V.K, Director	Sarda Solutions & Tech. Group HR & IT Head @ Sarda Group, Raipur	Industry Readiness by Management Graduates
5	12.10.18	Mr. Ramesh. B, Manager-Talent, Acquisition-HRM	BEROE, Chennai	How to mould yourself for Industry Readiness
6	05.12.18	Mr. M. Uday Bhaskar, General Manager	District Industries Centre, Vizianagaram	Industry background of Vizianagaram District (MSMEs)
7	10.12.18	Mr. A. Radhakrishna, Vice President-Finance	Barclays Branch	Ease of doing business in India
8	11.01.19	Mr. Y. Shankar, Alumni	Deloitte, Hyderabad	Resume writing and Interview facing readiness
9	06.02.19	Mr. Ajit Jain, Country Head-HR	Signode India Ltd., Hyderabad	Change Management
10	23.04.19	Mr. Suresh Betha, Professional Trainer	Drona Consultancy, Visakhapatnam	T3 (Teach-Train-Transform)

## Sample Proofs



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2018-19  
10.

22.04.2019





GUEST LECTURE








The Dept. is arranging a guest lecture to MBA II Semester students as detailed below.

Topic : T<sup>3</sup> (Teach – Train – Transform)  
Resource person : Mr. Suresh Betha, Professional Trainer  
Date & Venue : 23.04.2019 @ 9:00 AM at MBA Seminar Hall

All the students should interact with the speaker and get insights from the session.  
Attendance is mandatory, absent without permission will be taken seriously.

  
HEAD OF THE DEPARTMENT

Dr. GUSSON -   
Mr. ALN - Informed  
Dr. KR -   
Mr. DS - on ML  
Mr. TSP -   
Mr. RB -   
Mr. VSM - on Leave

Dr. SSNRI -   
Dr. EVPAS -   
Mr. BSK -   
Mr. MVV -   
Ms. PML -   
Ms. NDJ -   
Mr. TNR - 


05.12.2018

2018-19  
5

CIRCULAR

All the students and faculty are hereby informed that the Dept. is organizing a guest lecture on "Industry background of Vizianagaram District (MSMEs)" to be delivered by Mr. M. Uday Bhaskar, General Manager, District Industries Centre on today at 2:00 PM at MBA Seminar Hall. Attend without fail.

  
HEAD OF THE DEPARTMENT


Dr. GVSSN - 


Dr. SSNRI - 

Mr. ALN - 

Dr. EVPAS - 


Dr. KR - 

Mr. ESK - 

Mr. DS - 

Mr. MVV - 

Mr. TSP - 

Mrs. PML - 

Mr. RB - 

Ms. NDJ - 

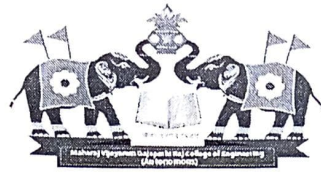
Mr. VSM - 

Mr. TNR - 

'B' SAR -



2018-19  
4



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17.09.2018

GUEST LECTURE

All the students of I Semester and faculty are here by informed that a guest lecture is arranged by the Dept. today @ 11:00 AM.

Topic : Industry readiness by management graduates  
Speaker : Mr. Viswanath Ch.V.K, Director  
Sarda Solutions & Tech.  
Group HR & IT Head at Sarda Group, Raipur  
Venue : MBA Seminar Hall

HEAD OF THE DEPARTMENT

- |           |   |      |           |        |
|-----------|---|------|-----------|--------|
| Dr. GVSSN | - | m EL | Dr. SSNRI | -      |
| Mr. ALN   | - |      | Dr. EVPAS | -      |
| Dr. KR    | - |      | Mr. ESK   | -      |
| Mr. DS    | - |      | Mr. MVV   | - m CL |
| Mr. TSP   | - |      | Mrs. PML  | -      |
| Mr. RB    | - |      | Ms. NDJ   | -      |
| Mr. VSM   | - |      | Mr. TNR   | -      |

2018-19  
2



**T&P-HUB**  
*Quenching Knowledge Thirst*

## **TRAINING AND PLACEMENT HUB**

Phone No. +91 9676495903, email: jsrinivasraju@gmail.com, website: www.tandphub.com  
GSTIN 37ADCPR6199N2ZL

### **MR. JAMPANA SRINIVAS RAJU**

**Educational Qualification:**

B. Tech - Mechanical Engineering,  
ICWA,  
MBA-HR & Marketing,  
Diploma in Systems Management

Certified Training and Development coach from XLRI,  
Jamshedpur.  
Certified Behavioural and Motivation Trainer from,  
National Safety Council, Government of India, Jaipur.  
Certified Counsellor, from Master's International, Dubai,  
UAE.



A seasoned HR Professional with more than 23 years of Training and Career development experience. Apart from handling end to end Training and Career Development function, have experience in Compensation and Benefit, Strategic HR, Performance Measurement, Statutory Compliances, Employ Engagement, Corporate Social Responsibility, Industrial Relations, Talent Acquisition, Global Mobility, Government Relations, Personnel and Administration, Employee Satisfaction Surveys, Perception Surveys, SWOT analysis, **Training & Placement of Engineering & Management graduates etc.**

Have worked for Corporate groups - Tata Steel Ltd. Lafarge-Holcim, Whirlpool Middle East and North Africa, Qassim Cement, Saudi Arabia, Peerless group, Educational Establishments - Ministry of Education, Government of Saudi Arabia, GITAM Deemed to be University, and

Currently Founder & Director, Training and Placement Hub, Visakhapatnam.

Conducts Training Programs for employees of Tata Steel Ltd, RINL - Visakhapatnam Steel Plant, Lafarge-Holcim group, L&T, NTPC, ACC, New India Assurance Co. Ltd., Usha Martin Ltd., HLL, GSK, HSBC, Brandix Apparels, Sequent Scientific Services, Alivira Animal Health Ltd., Arena Multimedia Ltd., Aptech Limited, TVS Group, GITAM University, Arab Swiss Cement Group, Egypt, Whirlpool Middle East and North Africa. etc.

Conducts CRT, soft skills and life skills training programs for Students of GITAM deemed to be University, Vignan deemed to be University, Gayatri Vidhya Parishad - group of Institutions, MVGR - Group of Institutions, Sri Sivani educational institutions, Sri Venkateshwara, Educational institutions, Bahrain Polytechnic, Kingdom of Bahrain, Qassim University, Saudi Arabia, Arab American University, Lebanon etc.

**Registered Office:** Flat No. 402, Sudarsanam Towers, Kalinga Nagar, Madhavadhara, Visakhapatnam - 530007, A P, India  
**Corporate Office, L&D Centre:** Door No. 37-10-112, Aiyappa Nagar, Murali Nagar, Visakhapatnam 530007, AP, India

2018-19

1.

**Visit of Prof V Raghunathan, CEO-GMR Varalakshmi Foundation and Director-Schulich School of Business in Hyderabad**

1 message

radha prasadaraju &lt;prasadarajudr@yahoo.com&gt;

Mon, Jul 16, 2018 at 10:39 AM

Reply-To: radha prasadaraju &lt;prasadarajudr@yahoo.com&gt;

To: Ramaraju KS Mgt MVGRCE Vzm &lt;kssramaraju@yahoo.co.in&gt;

Cc: Raju Kvl <principal.mvgr@gmail.com>, VICE-PRINCIPAL ACADEMIC <vpac.mvgr@gmail.com>, Chikka Purnachandra Rao <apac.mvgr@gmail.com>, "dr.r.ramesh" <dr.r.ramesh@mvgrce.edu.in>, "Dr. K.V.Lakshmi Raju" <kvl\_raju@yahoo.co.in>, Rajeswara Rao <drkuppili@gmail.com>, DEAN CIVIL ENGG <deanci.mvgr@gmail.com>, "dean.sp.mvgr" <dean.sp.mvgr@gmail.com>, "dean.sa" <dean.sa@mvgrce.edu.in>, "Dean T&P (MVGR)" <deantp@mvgrce.edu.in>, Fomvgr <fomvgr@gmail.com>, Fomvgr <fo.mvgr@gmail.com>, Sanyasiraju Gvssn <sanyasirajugvssn@gmail.com>, Ranga Raju <apad.mvgr@gmail.com>, Chemhod Mvgr <chemhod.mvgr@gmail.com>, "HOD (MVGR Civil)" <civilhod@mvgrce.edu.in>, Civilhod <civilhod@mvgece.edu.in>, Subba Rao Ch MVGR College of Engg-Chem Engg <subbaraochv@rediffmail.com>, "Dr Ch V. Subba Rao" <subbaraoch@mvgrce.edu.in>, Ponnada Markandeya Raju <markandeyaraju@gmail.com>, "markandeyaraju@mvgrce.edu.in" <markandeyaraju@mvgrce.edu.in>, "cs.mvgr" <cs.mvgr@gmail.com>, Seetharamaraju PS CSE MVGRCE Vzm <vicky.pooapati@gmail.com>, Sitharama Raju PS CSE MVGR Coll of Engg <vicky.pooapati@mvgrce.edu.in>, "eעהod.mvgr" <eעהod.mvgr@gmail.com>, Ramana Reddy <profrreddy@yahoo.co.in>, "eeehod.mvgr" <eeehod.mvgr@gmail.com>, Sahu SK EEE MVGRCE Vzm <sarat.sahu@gmail.com>, Eeehod <eeehod@gmail.com>, "hod.it.mvgr" <hod.it.mvgr@gmail.com>, "hodcivil.mvgr" <hodcivil.mvgr@gmail.com>, "Nagesh V. Dept of IT MVGR Coll of Engg" <itsnageshv@gmail.com>, "HOD (MVGR Mech)" <mechhod@mvgrce.edu.in>, "mechhod.mvgr" <mechhod.mvgr@gmail.com>, "Mech. Mvgr" <mech.mvgr@gmail.com>, Mech HOD Official <mech.hod@gmail.com>, Dr TVN Partha Sarathi <hod.chemistry.mvgr@gmail.com>, "Dr Sarathi V. N. P. Tirumala" <deanexaminations.mvgr@gmail.com>, Maths Department <hod.maths.mvgr@gmail.com>, "Dr.G.Srinivasa Reddy" <hod.physics.mvgr@gmail.com>, MVGR COLLEGE <hod.english.mvgr@gmail.com>, "mbahod.mvgr" <mbahod.mvgr@gmail.com>

Dear Prof Rama Raju garu

Please be informed that esteemed Prof V Raghunathan, CEO-GMR Varalakshmi Foundation, Bengaluru and Director-Schulich School of Business in Hyderabad is visiting us tomorrow for delivering respected Dr P Ananda Gajapathi Raju Memorial Lecture on Jul 17 (Tuesday)/11:00-12:30 hrs, whose birthday is celebrated on this day.

Prof Raghunathan garu, Ph D in Economics from IIM-Kolkata was Professor of Economics at IIM-Ahmedabad and founder President of ING-Vysya Bank before assuming the position as CEO-GMR Valalakshmi Foundation (Chairman of Governing Council-GMR Institute of Technology, Rajam). He is the Founder Director of Schulich School of Business (York University, Toronto, Canada) in Hyderabad for the last 4 years. His brief CV is attached for kind perusal.

You are requested kindly entuse all our faculty colleagues and dear students pursuing MBA to please attend the above lecture in Seminar Hall and also interact with the distinguished Speaker, a prolific writer, who authored 15 books on varied topics.

All learned HoDs, alongwith dear faculty, who are free from classwork, are requested to kindly attend the above Lecture. Students of 3rd year/4th year, who are interested and free from classes, may also be enthused to participate in this event.

After the Lecture, a few senior faculty in Management, Members of Admin Team, etc., are requested to kindly join our esteemed Principal



Website: [www.mvgrce.com](http://www.mvgrce.com)  
Email: [mbahod.mvgr@gmail.com](mailto:mbahod.mvgr@gmail.com)  
Admn. Office: 08922-241732, 241199 (PBX)  
Dept. Office: 08922-241742(O), 241743 (HOD)  
FAX: 08922-241014

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2018-19  
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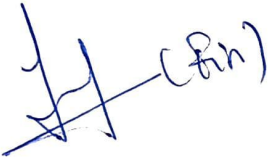
01.08.2018

**CIRCULAR**

All the students are hereby informed that the Dept. is facilitating an interaction with students on "Campus placement process" by Mr. J. Srinivasa Raju, Expert from Training & Placement Hub, Visakhapatnam at 2:00 PM today.

  
Faculty in-Charge

  
HEAD OF THE DEPARTMENT

  
(Prn)



Website: [www.mvgrce.com](http://www.mvgrce.com)  
Email: [mbahod.mvgr@gmail.com](mailto:mbahod.mvgr@gmail.com)  
Admn. Office: 08922-241732, 241199 (PBX)  
Dept. Office: 08922-241742(O), 241743 (HOD)  
FAX: 08922-241014

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2016-17  
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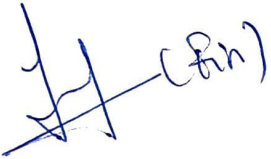
01.08.2018

**CIRCULAR**

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Faculty in-Charge

  
HEAD OF THE DEPARTMENT

  
(Prin)



# 2017-18

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Guest lectures arranged to students during the Academic Year 2017-18**

<b>S. No.</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	21.07.2017	Dr. N. Bhanumathidas	Founder	Eco carbon Pvt. Ltd	Durability of concrete-Role of advanced concrete technological practices
2	26.08.2017	Dr. K.N. Satyanarayana	Director	IIT Tirupati	Motivation to Civil Engineering Graduates
3	04.08.2017	Dr. Ing. P Srinivasa Rao	Former Dean Academics,	IIT Madras	Prestressed Concrete
4	04.08.2017	Dr. Penmetsa Rama Raju	Retd. Joint Secretary	Govt. of AP	Rehabilitation of Gannavaram Aqueduct–Case Study
5	04.08.2017	Mr. Dinesh Chandran K P	Head – Technical Services & R&D of Building Products Division,	UltraTech Cement Limited	Repair, Strengthening and Restoration of buildings - A Holistic view
6	05.08.2017	Dr. D. Rama Seshu	Professor	NIT Warangal	Condition assessment of structures using NDT methods
7	05.08.2017	Dr. K. Srinivasa Rao	Professor	Andhra University	Non-destructive evaluation of Fire affected RC elements
8	05.08.2017	Sri. G. Tejaswi Rajeev Kumar,	Specification Engineer	FOSROC Chemical India Pvt Ltd.	Repair, Rehabilitation & Retrofitting of Concrete Elements – Role of Chemical admixtures
9	15.09.2017	Dr. Brajesh K Dubey, FIE, C. Eng.	Associate Professor	IIT Kharagpur	Solid waste management
10	15.09.2017	Sri. R. Nageswara Rao	Superintending Engineer	Irrigation Dept., Vizianagaram	Irrigation projects in north coastal districts
11	08.12.2017	Dr. B. Nageswara Rao	Professor	IIT Madras	Introduction to Reliability Analysis
12	09.12.2017	Dr. S. K. Barai	Professor	IIT Kharagpur	Neural Networks in Structural Reliability
13	08.12.2017	Dr. Sayan Gupta	Assoc.	IIT Madras	Uncertainty

			Professor		Quantification and Structural Reliability
14	09.12.2017	Dr. K.V.G.D. Balaji	Professor	GITAM University	Role of Reliability Analysis in Testing and Assessment of Concrete Quality
15	09.12.2017	Sri. K.V. Rao	Associate Vice President	Aarvee Associates	Skills required by future engineers
16	27.03.2017	Dr. A. Subhash Babu	AGM	RMSI, Hyderabad	Remote Sensing applications in Water Resources Engineering

**Guest lectures arranged for students during the academic year 2017-18**

<b>S.no.</b>	<b>Date of lecture</b>	<b>Title of the lecture</b>	<b>Name and designation of the resource person</b>	<b>Beneficiary</b>
1	23/03/2018	Applications of signals and systems	Dr. M. Jaya Bharat Reddy, Associate Professor, NIT, Trichy	II B.Tech. students and Faculty
2	9/02/ 2018	IOT applications	Dr. Ch. V V S Bhaskara Reddy, Professor, Andhra university, Visakhapatnam	III & IV B.Tech. students and Faculty
3	05/02/2018	Overview of thermal power stations	Sri M Ramachandra, AGM, TPP, Steel plant, Visakhapatnam	III & IV B.Tech. students and Faculty
4	31/01/2018	Industry Expectations from Young Engineers	Mrs. Keerthana Susarapu Technical Consultant Technical Load-PLM team Center KPIT Technologies Ltd	III B.Tech. students
5	18/07/ 2017	Applications of VFD drive	Mr Anand Saxena, Integral services, Visakhapatnam	IV B.Tech. students and Faculty
6	11/07/2017	Micro controllers and its applications	Dr Ch. V V S Bhaskara Reddy, Professor, Andhra university, Visakhapatnam	III & IV B.Tech. students and Faculty

19	Orientation Programme-B Tech Guru	G.Prashant Kumar, Consultant, B.Tech Guru	19-06-18	II B.Tech	60
<b>Academic Year 2017-18</b>					
1	Competencies required for early Professionals	Mr. K. Pradeep Kumar, Vice President-Coromandel, Hyderabad	13-03-18	III B.Tech	60
2	HRD	Mr. V.Shashank, Solenis, Hyderabad	17-02-18	III. B Tech	70
3	Maxwell's Equations & Recent Trends in IC Engines	Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune	16-10-17	II B.Tech	200
4	Civil Services Examinations	Mrs. Renuka, Senior Official, Govt. of A.P.	09-08-17	I-IV B.Tech	150
5	Application of Renewable Energy for Rural Development	AISECT University, Bhopal Village, MENDUA, Post, Bhojpur, M.P.	04-08-17	II B.Tech	153
6	Airports of the Future-A Multi-disciplinary Approach for the Design and Management of Airport Terminals	Professor and Project Director-Airports of the Future, School of Chemistry, Physics and Mechanical Engineering, Queensland University of Technology(QUT), Brisbane, Australia	01-08-17	III B.Tech	155
8	1) 5S 2) Lean Production 3) Push and Pull Production system 4) MOST (Maynard Operation Sequence Technique	Mr. D. Uma Maheswara Rao, Manager, Industrial Engineering, Uniparts India Limited, Visakhapatnam	21-07-17	III B.Tech	150
9	IGCC- a Cleaner way to produce	Mr. S. Rajeswar Engineer, GE	07-07-17	IV B.Tech	130

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	Power- Designing from a CFD perspective	Power,Bengaluru.			
<b>Academic Year 2016-17</b>					
1	Choice based Credit System	Dr. R. Ramesh, Dean R&D MVGRCE, VZM	28-02-17	II B.Tech	125
2	Role of Engineers as Effective Engineering Manager	Dr. Duvvada Rama Prasad, Dy. General Manager (Projects), RINL, Vizag Steel Plant. Visakhapatnam.	20-02-17	III B.Tech	20
3	Emerging trends in building technology	Mr.Subrahmanyam, senior project manager	31-01-17	III B.Tech	120
4	Life Cycle of An Automobile	D. Nischal, Design Engineer, Mercedes Benz Research and Development India Private Limited, Bangalore	06-12-16	III B. Tech IV B. Tech	150
5	Pure Substance	Dr. J. Simhachalam, Deputy General Manager, Powertrain Engineering, ARAI, Pune	25-10-16	II B. Tech	160
6	Acoustic Signature Mitigation Techniques	Sri. V. Rama Krishna, Scientist 'D', NSTL, Visakhapatnam	18-08-16	III B. Tech IV B. Tech	152
7	Alternate Fuel Technologies - Future Emission Regulations and Road Map for India	Dr. S.S. Thipse Deputy Director, Power Train Engineering, ARAI, Pune	01-08-16	III B. Tech IV B. Tech	160
8	Engine Management, Controls, Measurement and Calibration	MrYogesh Kalia Director of Medhaavi Center for Automotive Research, Punjab	01-08-16	III B. Tech IV B. Tech	150
9	Advanced Fuel Efficiency and Combustion Technologies – Fuel efficiency technologies, Combustion	Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune	02-08-16	III B. Tech IV B. Tech	400

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## GUEST LECTURES ARRANGED

AY: 2017-18



- 1) Guest Lecture on “Competencies required for early Professionals” delivered by Mr. K. Pradeep Kumar, Vice President- Coromandel, and Hyderabad on 13-03-2018 for B. Tech VI semester students.



- 2) Guest Lecture on “Human Resources development” delivered by Mr. V.Shashank, Solenis, Hyderabad on 17-02-2018 for B. Tech VI semester students.



- 3) Guest Lecture on “Maxwell's Equations & Recent Trends in IC Engines” delivered by Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune, on 16-10-17 for B. Tech III semester students



4) Guest Lecture on “Civil Services Examinations” delivered by Mrs. Renuka, Senior Official, Govt. of A.P, on 09-08-17 for all B. Tech students.



5) Guest Lecture on “Application of Renewable Energy for Rural Development” delivered by Dr. Anil Kurchania, Director, Centre for Renewable energy, AISECT University, Bhopal Village, MENDUA, Post Bhojpur, M.P. on 04-08-17 for II B. Tech students.



6) Guest Lecture on “Airports of the Future-A Multi-disciplinary Approach for the Design and Management of Airport Terminals” delivered by Kanaka Durga Vara PrasadYarlagadda, Professor and Project Director-Airports of the Future, School of Chemistry, Physics and Mechanical Engg, Queensland University of Technology(QUT), Brisbane, Australia on 01-08-17 for III B. Tech students



7) Guest Lecture on “1) 5S 2) Lean Production 3) Push and Pull Production system 4) MOST (Maynard Operation Sequence Technique)” delivered by Mr. D. Uma Maheswara Rao, Manager, Industrial Engineering, Uniparts india Limited, Visakhapatnam, on 21-07-17 for III and IV B. Tech students.



8) Guest Lecture on “IGCC- a Cleaner way to produce Power- Designing from a CFD perspective” delivered by Mr. S. Rajeswar, Engineer, GE Power, Bengaluru. on 07-07-17 for IV B.Tech students.

**AY 2017-18**

## Guest lectures

AY 2017-18

S.No.	Title	Resource person	Date	Target audience
1	Computer Networks	Dr. Krishna Kishroe Dhara CTO & Chief Scientist of Zippr	07.08.17	III & IV years B.Tech
2	Formal Verification(VLSI)	Mr. M.V.A. Kiran Kumar. Senior Design Engineer, INTEL, Bangalore	10.08.17	IVth year B.Tech
3	Fuzzy logic controllers and their applications	Dr.S.K.Patra, Director, IIIT, Vadodara	08.09.17	IVth year B.Tech

### 1. Computer Networks



Dr. Krishna Kishroe Dhara, CTO & Chief Scientist of Zippr had delivered a guest lecture on Computer Networks.

#### List of Students attended

S.No	Regd. No	Name of the Student
1	15331A0401	AKULA SRIKANTH
2	15331A0402	ALAMANDA SATYAVATHI
3	15331A0403	ANNAVARAPU NAVEEN
4	15331A0404	ANUSHA ALAJANGI
5	15331A0405	APARNA RATH
6	15331A0406	ARAY SANYASI NEELIMA
7	15331A0407	ARIKA ASHOK
8	15331A0408	ARJI HIMA RAJASEKHAR
9	15331A0409	AVASARALA SRIKANTH

10	15331A0410	AYAPILLA SAI LAKSHMI PRASANNA
11	15331A0411	BAMMIDI MANISH RAJA
12	15331A0413	BATHINI MOHIT PRASAD
13	15331A0414	BATTULA MOHANA KRISHNA
14	15331A0415	BEHARA SRAVANI
15	15331A0416	BELLANA RAJA NANDHINI
16	15331A0417	BODDA JYOSHNA
17	15331A0418	BODDEDA HARSHA SREEVARDHAN RAJ
18	15331A0431	DASARI MANOHAR
19	15331A0432	DATLA MOUNIKA
20	15331A0433	DEVU SAI PRATHYUSHA
21	15331A0434	DHATLA KAVYA SAI SATYA MOUNIKA
22	15331A0435	DIVAKARLA VENKATA SREEVALLI
23	15331A0436	DIVVALA SAGAR
24	15331A0437	DODDI PYDI RAJU
25	15331A0439	EARLA TARUN KUMAR
26	15331A0440	GALLA PRASANNA KUMARI
27	15331A0441	GANAPATHIRAJU SOWNDARYA
28	15331A0442	GANIVADA KIRAN
29	15331A0443	GEDALA PAVAN VENKATA SAI KALYAN
30	15331A0444	GEDELA LAXMANA RAO
31	15331A0445	GODDI GANESH RAMACHANDRA RAO
32	15331A0446	GONDELA SUNEEL KUMAR
33	15331A0460	JANNI GAYATHRI
34	15331A0461	JOTSALYA MURRU
35	15331A0462	K RUCHITHA
36	15331A0463	KADALI VINAY CHANDRA SEKHAR
37	15331A0464	KALAGARLA SIVA SANKAR
38	15331A0465	KALYANA SWETHA
39	15331A0466	KANCHARLA INDRANI
40	15331A0467	KANDIPILLI VENKATA LOKESH
41	15331A0468	KANDREGULA SHIVA CHAITANYA
42	15331A0469	KANTAMSETTI ABHISHEK
43	15331A0470	KANURU SAI MANIKANTA
44	15331A0471	KAPPALA SANDHYA
45	15331A0480	KODUKULLA VENKATA KRISHNAVAMSI
46	15331A0481	KOLAKALURI SHAINAY GLORY
47	15331A0482	KOLAPALLI SANTOSH MADHURI

48	15331A0483	KOLLI VENKATA LAKSHMI
49	15331A0485	KONAPALA PAVAN KUMAR
50	15331A0486	KONCHADA LASYA
51	15331A0487	KONDAPALLI BALA KRISHNA MURALI
52	15331A0488	KOPPARAPU KALYAN
53	15331A0489	KOSANAM SUNIL SAI KRISHNA
54	15331A0490	KOSIREDDI VENKATESH
55	15331A0492	KUPPILI RANJIT KUMAR
56	15331A0493	KURIVELLA SAI SUNEEL
57	15331A0494	LANKAVALASA YAMUNA
58	15331A0495	LAVUDI SUNITHA PATNAIK
59	15331A0496	LENKA ANIL KUMAR
60	15331A0497	LOLABHATTU UMA SHANKAR RAJU
61	15331A0498	MADDULA JAYNEEL
62	15331A04A0	MAHANTHI JOTHSANA DEVI
63	15331A04A1	MANCHUPALLI SAI KUMAR
64	15331A04A2	MARISSETTY BALA NAGENDRA
65	15331A04A3	MEESALA TILAK
66	15331A04A4	MERUGU DURGA PRASANTH
67	15331A04A5	MIDATHANA PUJITHA
68	15331A04A6	MUHAMMAD MATHEENULAIN
69	15331A04A7	MUNUPATRULA SIDDHARTH
70	15331A04A8	MUPPIDI SEKHAR BABU
71	15331A04A9	NATHANI VISHNU TEJA
72	15331A04B0	NEBARTHI SRINIVAS DEEPAK
73	15331A04B3	NETTEM NIKHIL
74	15331A04B4	NOKKU SEKHAR
75	15331A04B5	PALA TEJESWAR
76	15331A04B6	PALLA RAVI
77	15331A04B7	PANCHADA GOPALAKRISHNA
78	15331A04B8	PANIGRAHI HARIPRIYA
79	15331A04B9	PATNANA MADHURI
80	15331A04C0	PECHETTI HARI CHANDANA
81	15331A04C1	PEDADA INDUMATHI
82	15331A04C2	PEDAGADI SAI KRISHNA
83	15331A04C3	PEDAPENKI TANUJA
84	15331A04C4	PENTAKOTA SRINIVASU
85	15331A04C5	PONNADA KASTHURI

86	15331A04C8	PYDI JASWANTH
87	15331A04C9	PYDISETTY GAYATRI
88	15331A04D0	PYLA UJWALA
89	15331A04D1	RAJAMUDILI SAMPATH KRISHNA
90	15331A04D2	RAJAPU MONICA
91	15331A04D3	RALLAPALLI VENKATA SAI HIMA BINDU
92	15331A04D4	RAMBHA SARATH CHANDRA ROOPESH
93	15331A04E6	SHAIK SAMEER
94	15331A04E7	SHAKEENA NOORANI
95	15331A04E8	SHATABDI MAHATA
96	15331A04E9	SIDDA MADHU KIRAN
97	15331A04F0	SINGAMPALLI SANATH PRAMODH
98	15331A04F1	SOMPALLI TEJASWI
99	15331A04F2	SRUNGARAPU CHAITANYA KUMAR
100	15331A04F3	SUBNIVEESU AVINASH
101	15331A04F4	SURATHA GURU SWAROOP
102	15331A04F5	TADEPALLI SNEHA RAJESHWARI
103	15331A04F7	TATA REDDY SATHI
104	15331A04F8	TEELLA MANIKANTA
105	15331A04G4	VALUROUTHU SHUBHAM
106	15331A04G5	VANAPALLI SWETHA SREE
107	15331A04G6	VANGAPANDU LALITHA MANASA
108	15331A04G7	VANUMU MANI DEEP
109	15331A04G8	VANYAMREDDY KRISHNA SAI ARAVIND
110	15331A04G9	VARRE GANESH KUMAR
111	15331A04H0	VASAPILLI LAKSHMAN RAO
112	15331A04H1	VASIREDDY POOJITHA
113	15331A04H3	VEERNI PRAVEEN KUMAR
114	15331A04H4	VEMALI ANAND KUMAR
115	15331A04H5	YALLA SAI RAMESH
116	15331A04H6	YELLABILLI AKHIL
117	15331A04H7	MAHANTHI HARYAKSHA ROY
118	15331A04H8	PERLI THERISA SUHASINI
119	15331A04H9	NAPRI VIKAS
120	16335A0401	BAMMIDI GOPALA KRISHNA
121	16335A0402	BHASURU SAI PRAKASH
122	16335A0403	CHAVALI UGENDRA GOPI
123	16335A0419	KELLA YAMINI

124	16335A0421	KOTTHAPALLI DIVYA
125	16335A0422	MAMMULA RAVALI
126	16335A0424	MANIKYAM CHALAPATHI
127	16335A0425	MEESALA SIVA
128	16335A0426	MOHAMMAD ARSHAD ALI
129	16335A0427	PALURI JANARDHANA REDDY
130	16335A0428	PAPPU HEMANTH
131	16335A0429	REVATHI ALAMURU
132	16335A0430	SEETA VENKATA SWAMY NAIDU
133	16335A0431	SESETTI SAI KUMAR
134	16335A0432	URITI RAVI TEJA
135	16335A0433	VANGALAPUDI SWETHA
136	16335A0434	VUPPALA NAGA LAKSHMI ABINAYA SAHITHI
137	16335A0435	YELLAPRAGADA VENKATA SAI SOWMYA
138	16335A0436	KARETI SAI NIKHIL REDDY
139	14331A0401	A VASANTHA MANJARI
140	14331A0402	ADAPA RAMA RAO
141	14331A0403	ADIMULAM MAHESWARI
142	14331A0404	ADIVARAPU RAVINDRA
143	14331A0405	AGRAPU VAMSI KRISHNA YADAV
144	14331A0407	AMITI SRI HARSHA
145	14331A0416	BANDARU SOWMYA
146	14331A0417	BANTUBILLI VENKATA RAO
147	14331A0418	BARATAM SRIJA
148	14331A0419	BATTULA DEVAKEESWAR
149	14331A0423	BOLLA SHARMISTA
150	14331A0424	BOMMULURI DIVYA HARSHINI
151	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA
152	14331A0426	BOTCHA DIVYA
153	14331A0427	BOTTA SAI RAM PAVAN KUMAR YADAV
154	14331A0428	BUDDHARAJU VINEETH VARMA
155	14331A0429	BURLI MOUNICA
156	14331A0430	CHALLA TEJA
157	14331A0431	CHAPPA NAGA VENKATA SAI RAVITEJA
158	14331A0432	CHEEPURUPALLI SANDHYA
159	14331A0435	DANDU S S V A RAGHURAM VARMA
160	14331A0436	DANTULURI RACHANA
161	14331A0437	DATTI GAYATHRI

162	14331A0438	DAVULURI VENKATA UPENDRA
163	14331A0439	DOMMISI GOUTAM RAJU
164	14331A0440	ELURI RAMESH BABU
165	14331A0441	EMANDI SINDHUSHA
166	14331A0442	GADI SAI SAMEER
167	14331A0443	GALLA ESWAR PRASAD
168	14331A0444	GANGAVAMSAM MANAS SAI CHARAN
169	14331A0445	GANNAVAPU KASHYAP
170	14331A0446	GANTI MAHAPATRUNI SOWJANYA
171	14331A0447	GANTI SRI NAGA SAI AJAY KAMAL
172	14331A0450	GARIMELLA VENKATA SAI SASHANK
173	14331A0451	GAYATHRI ALLURI
174	14331A0452	GODABA RAMYA
175	14331A0453	GODULA SETUYAMINI
176	14331A0454	GOLLA JERUSHA MANOAH
177	14331A0455	GOLLANGI HEMANTH KUMAR
178	14331A0456	GONNABATHULA JAGADISH KUMAR
179	14331A0457	GORAKALA SAGAR
180	14331A0458	GORLE NARAYANA RAO
181	14331A0461	GUDIVADA SAI PRAVALLIKA
182	14331A0462	GUJJU CHAITANYA KUMAR REDDY
183	14331A0463	GULLIPALLI NAGENDRA KUMAR
184	14331A0464	GURU POORNA CHANDRA RAO
185	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
186	14331A0475	KAPALA LIPESH
187	14331A0476	KAPUGANTI SURYA TEJA
188	14331A0477	KARRI RAMYA
189	14331A0478	KASA NAGASREE
190	14331A0479	KATHULA GANDHANA
191	14331A0480	KINJARAPU GEETANJALI
192	14331A0482	KOLATI SRIKAR
193	14331A0485	KOLLURU KARTHIK
194	14331A0489	KORIBILLI CHAITANYA
195	14331A0490	KORLA SRICHANDRAVINEELA
196	14331A0491	KORRAYI SANTHOSH
197	14331A0493	KOYYA NUTHAN
198	14331A0494	KUTCHARLAPATI NAVEEN BHARGAVA VARMA
199	14331A0495	LACHIREDDI AKHILA

200	14331A04A5	MANDI UDAY BASKHAR
201	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
202	14331A04B7	MOHAMMAD RAZAULLAH
203	14331A04C9	NIMMALA POORNIMA
204	14331A04D0	NISTALA SAI SUSHANTH
205	14331A04D1	PADALA SATISH KUMAR REDDY
206	14331A04D3	PALLA BHAVANA
207	14331A04D4	PEKALA HARSHA PRIYA
208	14331A04D5	PENTAPATI PRATHYUSHA
209	14331A04E7	REDDY SAI DEEPAK
210	14331A04E8	RUNKANA PUSHPAK
211	14331A04F0	SELAGAMSETTY NEELIMA
212	14331A04F2	SHEIK NASREEN SULTHANA
213	14331A04F4	SIDDHAMSETTI DIVYA
214	14331A04F5	SINGIDI SAI BHARATH
215	14331A04F7	SIYYADRI DEVANANDA KISHORE
216	14331A04G8	VANJANGI VEDASRI
217	14331A04G9	VECHALAPU ADITYANAIDU
218	14331A04H0	VEDALA SRINIVAS CHAKRAVARTHY
219	14331A04H1	VELAGA VENKATA VIVEK
220	14331A04H2	VELLANKI SRIKANTH
221	14331A04H3	VEMULAPUDI BALU KIRANKUMAR
222	14331A04H4	VIKRAM SHANMUKH SATYA PRABHU TEJ

## 2. Formal Verification(VLSI)

Mr. M.V.A. Kiran Kumar, Senior Design Engineer, INTEL, Bangalore had delivered a guest lecture on Formal Verification (VLSI).

List of Students attended

S.No	Regd. No	Name of the Student
1	13331A0425	CHENDA ARUN HYDE
2	14331A0401	A VASANTHA MANJARI
3	14331A0402	ADAPA RAMA RAO
4	14331A0403	ADIMULAM MAHESWARI
5	14331A0404	ADIVARAPU RAVINDRA
6	14331A0405	AGRAPU VAMSI KRISHNA YADAV
7	14331A0406	AKETI VENKAT GANESH KUMAR
8	14331A0408	AMUJURU SAI VENKATA KRISHNA VAMSI
9	14331A0409	ANUPOJU SRIKAVYA
10	14331A0411	AYI MANEESH
11	14331A0412	BADIGANTI KARTHIK

12	14331A0413	BADIPATLA NANDINI
13	14331A0414	BADRI VENKATA TARUNI
14	14331A0415	BANAM MANISHA
15	14331A0417	BANTUBILLI VENKATA RAO
16	14331A0418	BARATAM SRIJA
17	14331A0419	BATTULA DEVAKEESWAR
18	14331A0420	BEERA JESSY ROSSANNA
19	14331A0422	BHAMIDI RAMA SUBRAHMANYA BHARADWAJ
20	14331A0423	BOLLA SHARMISTA
21	14331A0424	BOMMULURI DIVYA HARSHINI
22	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA
23	14331A0427	BOTTA SAI RAM PAVAN KUMAR YADAV
24	14331A0428	BUDDHARAJU VINEETH VARMA
25	14331A0429	BURLI MOUNICA
26	14331A0430	CHALLA TEJA
27	14331A0431	CHAPPA NAGA VENKATA SAI RAVITEJA
28	14331A0433	D SAI GOUTHAM
29	14331A0434	DADI ARAVIND
30	14331A0436	DANTULURI RACHANA
31	14331A0437	DATTI GAYATHRI
32	14331A0438	DAVULURI VENKATA UPENDRA
33	14331A0439	DOMMISI GOUTAM RAJU
34	14331A0440	ELURI RAMESH BABU
35	14331A0441	EMANDI SINDHUSHA
36	14331A0442	GADI SAI SAMEER
37	14331A0444	GANGAVAMSAM MANAS SAI CHARAN
38	14331A0445	GANNAVARAPU KASHYAP
39	14331A0446	GANTI MAHAPATRUNI SOWJANYA
40	14331A0447	GANTI SRI NAGA SAI AJAY KAMAL
41	14331A0448	GANTI SRIVIDYA
42	14331A0449	GANTYADA RAGINI
43	14331A0450	GARIMELLA VENKATA SAI SASHANK
44	14331A0451	GAYATHRI ALLURI
45	14331A0452	GODABA RAMYA
46	14331A0453	GODULA SETUYAMINI
47	14331A0455	GOLLANGI HEMANTH KUMAR
48	14331A0456	GONNABATHULA JAGADISH KUMAR
49	14331A0457	GORAKALA SAGAR
50	14331A0459	GRANDHI LOVA SRI SWETHA
51	14331A0460	GRANDHI SRAVANI
52	14331A0461	GUDIVADA SAI PRAVALLIKA
53	14331A0462	GUJJU CHAITANYA KUMAR REDDY
54	14331A0464	GURU POORNA CHANDRA RAO
55	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
56	14331A0466	INDANA YESWANTH
57	14331A0467	JAMI SUNEETHA

58	14331A0468	JANGA DIVYA
59	14331A0469	JASMINE
60	14331A0470	KALISSETTY TEJESWAR
61	14331A0471	KAMMILA SUKESH SREE NAGA SAI
62	14331A0472	KAMUJU SATYA DURGA SUPRIYA
63	14331A0473	KANDIPILLI S V C JAHNAVI MRUDULA
64	14331A0474	KANDUKOORI VAMSI KUMAR
65	14331A0475	KAPALA LIPESH
66	14331A0476	KAPUGANTI SURYA TEJA
67	14331A0477	KARRI RAMYA
68	14331A0478	KASA NAGASREE
69	14331A0479	KATHULA GANDHANA
70	14331A0480	KINJARAPU GEETANJALI
71	14331A0481	KINTHALI VINAY KUMAR
72	14331A0483	KOLLA THARUN
73	14331A0484	KOLLI HARI KRISHNA
74	14331A0485	KOLLURU KARTHIK
75	14331A0486	KONDETI SIVA KALI YOGESH
76	14331A0488	KORABU SREE MOURYA SAGAR
77	14331A0489	KORIBILLI CHAITANYA
78	14331A0491	KORRAYI SANTHOSH
79	14331A0492	KOTTU LAKSHMI SAI PRASANTH
80	14331A0493	KOYYA NUTHAN
81	14331A0494	KUTCHARLAPATI NAVEEN BHARGAVA VARMA
82	14331A0496	LAKHINENI SAMEER
83	14331A0497	LALISSETTI ANAND KUMAR
84	14331A0498	MAHANTHI LAVANYA
85	14331A0499	MAJJI AASISH MITHRA
86	14331A04A0	MAJJI HIMA PRASANNA KUMAR RAJA
87	14331A04A1	MAJJI MOHAN BABU
88	14331A04A2	MAKIREDDY RAJULA NAIDU
89	14331A04A3	MANDAPATI SEETHARAMA RAJU
90	14331A04A4	MANDAPATI VIKASH VARMA
91	14331A04A5	MANDI UDAY BASKHAR
92	14331A04A6	MANGA NIKHILA
93	14331A04A7	MANYAM INDRAJA
94	14331A04A8	MARADA GNANESWARI
95	14331A04A9	MAREDDY SRILEKHA
96	14331A04B0	MAREMANDA VENKATA TULASIRAM
97	14331A04B1	MARISARLA IVAN JOEL
98	14331A04B2	MAVURU GEETHASREE
99	14331A04B3	MEDISSETTY HEMANTH KUMAR
100	14331A04B4	MEDURI V L SAI SREE
101	14331A04B5	MIRIYALA SAIKRISHNA
102	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH

103	14331A04B8	MOHAMMAD SHABBIR ALI
104	14331A04B9	MONGAM SURYA
105	14331A04C0	MUNGI SRI KANTH
106	14331A04C2	MYSARLLA LOHITH
107	14331A04C3	NAIDANA NISHANT
108	14331A04C4	NALLA LAKSHMANA RAO
109	14331A04C5	NALLA RAVITEJA
110	14331A04C7	NANDIRAJU VYSHNAVI POOJA
111	14331A04C8	NETTAM PRASANNA KUMAR CHOWDARY
112	14331A04C9	NIMMALA POORNIMA
113	14331A04D0	NISTALA SAI SUSHANTH
114	14331A04D1	PADALA SATISH KUMAR REDDY
115	14331A04D3	PALLA BHAVANA
116	14331A04D4	PEKALA HARSHA PRIYA
117	14331A04D5	PENTAPATI PRATHYUSHA
118	14331A04D6	PENTAPATI VIJAYA LAKSHMI
119	14331A04D8	PODUGU MEENAKSHI
120	14331A04D9	PONNADA GOWRI SANKAR BALAJI
121	14331A04E0	POTHAKAMURI UDAY
122	14331A04E1	PUDU HARSHA VARDHAN
123	14331A04E2	PYDI SUNIL KUMAR
124	14331A04E3	PYLA SAI DILEEP
125	14331A04E4	RAGHUMANDA SOWJANYA
126	14331A04E5	RAVILSETTY RAMANA MAHESH
127	14331A04E6	REDDI KOTESWARA RAO
128	14331A04E8	RUNKANA PUSHPAK
129	14331A04E9	SAINATH RAVI BEHARA
130	14331A04F1	SHAIK SAMEENA TASNEEM
131	14331A04F3	SIDDAVARAPU SONIA
132	14331A04F4	SIDDHAMSETTI DIVYA
133	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
134	14331A04F8	SODUM MANOJ KUMAR REDDY
135	14331A04F9	SOMU ABHIRAM
136	14331A04G0	SONTYANA GANESH
137	14331A04G1	SONTYANA LALITH SAI
138	14331A04G4	SRUNGARAMVENKATABUCHI SRIVEENA
139	14331A04G5	TARIGOPPULA RAHUL
140	14331A04G6	VADDADI SAI SANDEEP
141	14331A04G7	VAJRAGADA PRADEEP KUMUR
142	14331A04G9	VECHALAPU ADITYANAIDU
143	14331A04H0	VEDALA SRINIVAS CHAKRAVARTHY
144	14331A04H1	VELAGA VENKATA VIVEK
145	14331A04H2	VELLANKI SRIKANTH
146	14331A04H3	VEMULAPUDI BALU KIRANKUMAR
147	14331A04H4	VIKRAM SHANMUKH SATYA PRABHU TEJ
148	14331A04H6	YANDA BHARAT SAI CHARAN
149	14331A04H7	YAVARNA RISHITHA

150	14331A04H8	YELURI KAVYA SRI SIVA SAI
151	14331A04H9	YERRA DEMUDU NAIDU
152	14331A04I0	YERRAMSETTY HARIKA KASTURI
153	15335A0402	AMPOLU BHARGAV DEEP
154	15335A0403	BORA SRAVAN KUMAR
155	15335A0404	BAGGAM RADHA RAMANI
156	15335A0405	BODDEDA RAMYA DEVI
157	15335A0406	BONI MANOJ
158	15335A0408	CHAKKA RAJESH
159	15335A0409	CHALUMURI RAMYA
160	15335A0410	CHIPPADA YUGANDHAR
161	15335A0411	DADI NARAYANA PRADEEP KUMAR
162	15335A0412	DUDDU SUCHITHA
163	15335A0413	GEDELA ASHOK KUMAR
164	15335A0414	GONDHI SEETHA DEVI
165	15335A0415	GORLE SRAVANI
166	15335A0417	KANTA NAVEEN
167	15335A0418	KINTADA ATCHYUTA RAO
168	15335A0420	KOTHA KASI SURYA SAI MANIKANTA
169	15335A0421	MANCHIPILLI RAMMOHAN
170	15335A0422	MATTALA SATEESH
171	15335A0423	MATTAPALLI KIRANMAYI ANDAL
172	15335A0424	MATURU SAIGUPTA
173	15335A0425	PADALA HARIKA
174	15335A0427	PUKKALLA SHOBHA
175	15335A0428	RAJAM SOWJANYA
176	15335A0429	RONGALI DEVI SHEKHAR
177	15335A0431	TADDI VENKATASATYAKRANTHIKUMAR
178	15335A0432	TAMARALA AKHIL
179	15335A0433	THAMADA VINODH KUMAR
180	15335A0434	UBBISETTI SATISH
181	15335A0435	VADAMODULA TARAKESHWARARAO

### 3. Fuzzy logic controllers and their applications

Dr.S.K.Patra, Director, IIIT, Vadodara had delivered a guest lecture on Fuzzy logic controllers and their applications

List of Students attended

S.No	Regd. No	Name of the Student
1	13331A0425	CHENDA ARUN HYDE
2	14331A0401	A VASANTHA MANJARI
4	14331A0403	ADIMULAM MAHESWARI
5	14331A0404	ADIVARAPU RAVINDRA
6	14331A0405	AGRAPU VAMSI KRISHNA YADAV
9	14331A0408	AMUJURU SAI VENKATA KRISHNA VAMSI
10	14331A0409	ANUPOJU SRIKAVYA
13	14331A0412	BADIGANTI KARTHIK

14	14331A0413	BADIPATLA NANDINI
15	14331A0414	BADRI VENKATA TARUNI
16	14331A0415	BANAM MANISHA
18	14331A0417	BANTUBILLI VENKATA RAO
19	14331A0418	BARATAM SRIJA
20	14331A0419	BATTULA DEVAKEESWAR
23	14331A0422	BHAMIDI RAMA SUBRAHMANYA BHARADWAJ
24	14331A0423	BOLLA SHARMISTA
25	14331A0424	BOMMULURI DIVYA HARSHINI
26	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA
29	14331A0428	BUDDHARAJU VINEETH VARMA
30	14331A0429	BURLI MOUNICA
31	14331A0430	CHALLA TEJA
32	14331A0431	CHAPPA NAGA VENKATA SAI RAVITEJA
34	14331A0433	D SAI GOUTHAM
35	14331A0434	DADI ARAVIND
37	14331A0436	DANTULURI RACHANA
39	14331A0438	DAVULURI VENKATA UPENDRA
40	14331A0439	DOMMISI GOUTAM RAJU
41	14331A0440	ELURI RAMESH BABU
42	14331A0441	EMANDI SINDHUSHA
45	14331A0444	GANGAVAMSAM MANAS SAI CHARAN
46	14331A0445	GANNAVAPURU KASHYAP
47	14331A0446	GANTI MAHAPATRUNI SOWJANYA
48	14331A0447	GANTI SRI NAGA SAI AJAY KAMAL
49	14331A0448	GANTI SRIVIDYA
50	14331A0449	GANTYADA RAGINI
51	14331A0450	GARIMELLA VENKATA SAI SASHANK
52	14331A0451	GAYATHRI ALLURI
53	14331A0452	GODABA RAMYA
54	14331A0453	GODULA SETUYAMINI
56	14331A0455	GOLLANGI HEMANTH KUMAR
57	14331A0456	GONNABATHULA JAGADISH KUMAR
60	14331A0459	GRANDHI LOVA SRI SWETHA
61	14331A0460	GRANDHI SRAVANI
62	14331A0461	GUDIVADA SAI PRAVALLIKA
63	14331A0462	GUJJU CHAITANYA KUMAR REDDY
65	14331A0464	GURU POORNA CHANDRA RAO
67	14331A0466	INDANA YESWANTH
68	14331A0467	JAMI SUNEETHA
69	14331A0468	JANGA DIVYA
70	14331A0469	JASMINE
71	14331A0470	KALISSETTY TEJESWAR
72	14331A0471	KAMMILA SUKESH SREE NAGA SAI
73	14331A0472	KAMUJU SATYA DURGA SUPRIYA
75	14331A0474	KANDUKOORI VAMSI KUMAR

76	14331A0475	KAPALA LIPESH
77	14331A0476	KAPUGANTI SURYA TEJA
78	14331A0477	KARRI RAMYA
79	14331A0478	KASA NAGASREE
81	14331A0480	KINJARAPU GEETANJALI
82	14331A0481	KINTHALI VINAY KUMAR
84	14331A0483	KOLLA THARUN
85	14331A0484	KOLLI HARI KRISHNA
87	14331A0486	KONDETI SIVA KALI YOGESH
88	14331A0488	KORABU SREE MOURYA SAGAR
89	14331A0489	KORIBILLI CHAITANYA
91	14331A0491	KORRAYI SANTHOSH
92	14331A0492	KOTTU LAKSHMI SAI PRASANTH
93	14331A0493	KOYYA NUTHAN
94	14331A0494	KUTCHARLAPATI NAVEEN BHARGAVA VARMA
96	14331A0496	LAKHINENI SAMEER
97	14331A0497	LALISSETTI ANAND KUMAR
98	14331A0498	MAHANTHI LAVANYA
99	14331A0499	MAJJI AASISH MITHRA
101	14331A04A1	MAJJI MOHAN BABU
102	14331A04A2	MAKIREDDY RAJULA NAIDU
103	14331A04A3	MANDAPATI SEETHARAMA RAJU
104	14331A04A4	MANDAPATI VIKASH VARMA
105	14331A04A5	MANDI UDAY BASKHAR
107	14331A04A7	MANYAM INDRAJA
108	14331A04A8	MARADA GNANESWARI
109	14331A04A9	MAREDDY SRILEKHA
110	14331A04B0	MAREMANDA VENKATA TULASIRAM
111	14331A04B1	MARISARLA IVAN JOEL
113	14331A04B3	MEDISSETTY HEMANTH KUMAR
114	14331A04B4	MEDURI V L SAI SREE
115	14331A04B5	MIRIYALA SAIKRISHNA
116	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
118	14331A04B8	MOHAMMAD SHABBIR ALI
119	14331A04B9	MONGAM SURYA
120	14331A04C0	MUNGI SRI KANTH
122	14331A04C2	MYSARLLA LOHITH
123	14331A04C3	NAIDANA NISHANT
124	14331A04C4	NALLA LAKSHMANA RAO
125	14331A04C5	NALLA RAVITEJA
127	14331A04C7	NANDIRAJU VYSHNAVI POOJA
128	14331A04C8	NETTAM PRASANNA KUMAR CHOWDARY
130	14331A04D0	NISTALA SAI SUSHANTH
131	14331A04D1	PADALA SATISH KUMAR REDDY
132	14331A04D3	PALLA BHAVANA

133	14331A04D4	PEKALA HARSHA PRIYA
134	14331A04D5	PENTAPATI PRATHYUSHA
137	14331A04D8	PODUGU MEENAKSHI
138	14331A04D9	PONNADA GOWRI SANKAR BALAJI
139	14331A04E0	POTHAKAMURI UDAY
140	14331A04E1	PUDU HARSHA VARDHAN
141	14331A04E2	PYDI SUNIL KUMAR
142	14331A04E3	PYLA SAI DILEEP
143	14331A04E4	RAGHUMANDA SOWJANYA
144	14331A04E5	RAVILSETTY RAMANA MAHESH
145	14331A04E6	REDDI KOTESWARA RAO
147	14331A04E8	RUNKANA PUSHPAK
148	14331A04E9	SAINATH RAVI BEHARA
150	14331A04F1	SHAIK SAMEENA TASNEEM
152	14331A04F3	SIDDAVARAPU SONIA
153	14331A04F4	SIDDHAMSETTI DIVYA
155	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
157	14331A04F8	SODUM MANOJ KUMAR REDDY
158	14331A04F9	SOMU ABHIRAM
159	14331A04G0	SONTYANA GANESH
160	14331A04G1	SONTYANA LALITH SAI
163	14331A04G4	SRUNGARAMVENKATABUCHI SRIVEENA
164	14331A04G5	TARIGOPPULA RAHUL
165	14331A04G6	VADDADI SAI SANDEEP
166	14331A04G7	VAJRAGADA PRADEEP KUMUR
168	14331A04G9	VECHALAPU ADITYANAIDU
169	14331A04H0	VEDALA SRINIVAS CHAKRAVARTHY
171	14331A04H2	VELLANKI SRIKANTH
172	14331A04H3	VEMULAPUDI BALU KIRANKUMAR
173	14331A04H4	VIKRAM SHANMUKH SATYA PRABHU TEJ
175	14331A04H6	YANDA BHARAT SAI CHARAN
176	14331A04H7	YAVARNA RISHITHA
177	14331A04H8	YELURI KAVYA SRI SIVA SAI
178	14331A04H9	YERRA DEMUDU NAIDU
179	14331A04I0	YERRAMSETTY HARIKA KASTURI
181	15335A0402	AMPOLU BHARGAV DEEP
182	15335A0403	BORA SRAVAN KUMAR
183	15335A0404	BAGGAM RADHA RAMANI
184	15335A0405	BODDEDA RAMYA DEVI
185	15335A0406	BONI MANOJ
187	15335A0408	CHAKKA RAJESH
189	15335A0410	CHIPPADA YUGANDHAR
191	15335A0412	DUDDU SUCHITHA
192	15335A0413	GEDELA ASHOK KUMAR
193	15335A0414	GONDHI SEETHA DEVI
194	15335A0415	GORLE SRAVANI
195	15335A0417	KANTA NAVEEN

197	15335A0420	KOTHA KASI SURYA SAI MANIKANTA
198	15335A0421	MANCHIPILLI RAMMOHAN
200	15335A0423	MATTAPALLI KIRANMAYI ANDAL
201	15335A0424	MATURU SAIGUPTA
202	15335A0425	PADALA HARIKA
204	15335A0427	PUKKALLA SHOBHA
205	15335A0428	RAJAM SOWJANYA
206	15335A0429	RONGALI DEVI SHEKHAR
208	15335A0431	TADDI VENKATASATYAKRANTHIKUMAR
209	15335A0432	TAMARALA AKHIL
210	15335A0433	THAMADA VINODH KUMAR
211	15335A0434	UBBISETTI SATISH
212	15335A0435	VADAMODULA TARAKESHWARARAO

## Department: CSE

### Criteria: 1.1.1

2017-18

### Guest Lectures arranged

Sno	Date	Title	Venue	Participants	Summary
1	23-05-2018	Machine Learning	Admin Seminar Hall, MVGRCE(A)	15	M.Vamsi Krishna, Asst. Prof., CSE has delivered a guest lecture on 'Machine Learning Techniques' to the students of CSE during a student club event.
2	23-07-2017	IoT & Web App Development	Turing Lab, CSE, MVGRCE(A)	29	M.Vamsi Krishna, Asst. Prof., CSE has delivered a hands on lecture on 'Web App Development & IoT' to the students of CSE.
3	30-12-2017	Python Programming	Godel Lab, CSE, MVGRCE(A)	28	M.Vamsi Krishna, Asst. Prof., CSE has delivered a hands-on lecture during python training at CSE.
4	11 – 02-2018	Internet Surviellence Topic	MBA Seminar Hall, MVGRCE(A)	32	M.Vamsi Krishna, Asst. Prof., CSE has delivered a guest lecture on 'Internet Surviellence' to the students of CSE during Freedom Fest 2018 at MVGR.

**Academic Year (2017-18)**

S. No	Date	Name of the Expert	Designation	Name of the Organization	Topic of the lecture
1	29/07/2017	Sri P.Chandra Mohan	GM-TSD	Nagarjuna Fertilizers and Chemicals Ltd (NFCL), Kakinada, East Godavari (Dt)	Energy Conservation in Fertilizer Industries
2	24/03/2018	Sri K.Narasappa	President	Andhra Petrochemicals Ltd, Vizag	Opportunities for chemical engineers in petrochemical industries

**Academic Year (2017-18) S.No 1:****Title of the Guest Lecture:** Energy Conservation in Fertilizer Industries

Historical estimates of productivity growth in India's fertilizer sector vary from indicating an improvement to a decline in the sector's productivity. The variance may be traced to the time period of study, source of data for analysis, and type of indices and econometric specifications used for reporting productivity growth. We derive both growth accounting and econometric estimates of productivity growth for this sector. Our results show that over the observed period from 1973-74 to 1993-94 productivity increased by 2.3'-XOp.s. as indicated by the Translog index. Calculations of the Kendrick and Solow index support this finding. The increase took place during the era of total control when a retention price system and distribution control was in effect. The retention price system was coupled with relatively high norms on capacity utilization which supported productivity increase. With liberalization of the fertilizer sector and reduction of subsidies productivity declined substantially since the early 1990s, despite an increase in capacity utilization. Using a translog specification the econometric analysis reveals that technical progress in India's fertilizer sector has been biased towards the use of energy, while it has been capital and labor saving. The analysis of current changes in structure and energy efficiency in the sector demonstrates the major role policies and fiscal incentives play in the Indian fertilizer sector. Substantial energy savings and carbon reduction potential exists. Energy policies can help overcome barriers to the adoption of energy efficiency measures in giving proper incentives and correcting distorted prices.

**Description of the Guest Lecture:****Academic Year (2017-18) S.No 2:**

**Title of the Guest Lecture:** Opportunities for chemical engineers in petrochemical industries

Chemical Engineers can fulfill a large number of roles, they can be process engineers and responsible for a unit. They can be project engineers and run various capital improvement projects within a plant or unit, they can be consultants and fulfill jobs and roles that companies and clients might need. They can be involved in quality, environmental, safety, health, or other "support" job functions to support the plant as a whole.

The beauty of being a chemical engineer in the petrochemical and specialty chemical industries is that you can almost justify any and every position (with the appropriate amount of experience). Chemical engineering forms a solid base for any and all roles but its up to the experiences and the skills that you acquire as you develop your career, to determine when where and how fast your career will grow.

The speaker has summarized that in all the above mentioned areas of petrochemical industries, chemical engineers will have opportunities.

**Description of the Guest Lecture:**

**GUEST LECTURES ORGANIZED FOR THE ACADEMIC YEAR  
2017-2018**

<b>S.no</b>	<b>Date</b>	<b>Resource Person</b>	<b>Organization</b>	<b>Topic Delivered</b>
1	07.08.17	Dr. Ch.V. Lakshmipathi Raju	Greenwich University, U.K	Disrupts in Financial Markets
2	23.09.17	Mr. A. Radhakrishna, Vice President-Finance	Barclays Branch	International Banking - Various issues
3	11.10.17	Mr. J. Srinivas Raju	Director, T&P Hub, Visakhapatnam	Importance of communication skills in the present day of job market, current MBA's placement scenario in our country, how to get placed, latest job trends, how to remain self motivated throughout our life and how to stay focussed on our goals and ambitions.
4	16.12.17	Mr. Varun Agarwal	Chief operating officer, My money karma, Hyderabad	Startups & Funding
5	22.11.17	Mr. Y. Shankar, Alumni	Deloitte, Hyderabad	Interactive workshop on "Business Emails"
6	03.02.18	Mr. A. Radhakrishna	Barclay Branch (UK based)	Ring fencing the banks & Understanding the Union Budget-2018
7	13.03.18	Mr. K. Pradeep Kumar	Vice-President, Coromandel	Competencies required for early professionals

## Sample Proofs

2017-18  
1

Fwd: Good to meet you

Venkata Chinthalapati <V.L.R.Chinthalapati@greenwich.ac.uk>

Wed, Aug 30, 2017 at 7:28 PM

To: "principal.mvgr@gmail.com" <principal.mvgr@gmail.com>, "kvl\_raju@yahoo.co.in" <kvl\_raju@yahoo.co.in>

Dear Dr. Lakshmi pathi Raju garu,

Hope all is well. I just realised that some of the emails that sent during the 2nd week of August were not released by our server at Greenwich. Pl. find the email below that I was trying to send after our meeting.

Thanks & Regards,  
Raju

Sent from my iPhone

Begin forwarded message:

**From:** Venkata Chinthalapati <V.L.R.Chinthalapati@greenwich.ac.uk>  
**Date:** 11 August 2017 at 07:02:24 BST  
**To:** "principal@mvgrce.edu.in" <principal@mvgrce.edu.in>  
**Subject:** Good to meet you

Handwritten notes in green ink: "To HOD, MBAs" with an arrow pointing to the 'To' field of the forwarded message. Below it is a signature and the date "31/8/17" with "Dear PD" written underneath.

Dear Dr. Lakshmi pathi Raju garu,

It was my pleasure to meet you at your college. Thanks for the invitation to visit your collage and interact with your colleagues and students. I had very good time during my visit and thanks for your time.

As I mentioned in our meeting, I am happy to be available to you to provide my suggestions/opinions on any academic activities at your college. Let us keep in touch.

Best Regards,  
Raju

Dr. V L Raju Chinthalapati  
Senior Lecturer in Finance  
Department of Accounting and Finance  
Business School  
The University of Greenwich  
London SE10 9LS  
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Registered office: Old Royal Naval College, Park Row, Greenwich, London SE10 9LS.



# 2016-17

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Guest lectures arranged to students during the Academic Year 2016-17**

<b>S. No.</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	15.07.2016	Sri. B. Uma Shankar	Deputy Executive Engineer	Rural Water Supply	Earth Science and Engineering Integration in creation of sustainable multi village safe drinking water supply in Vizianagaram district
2	12.08.2016	Sri. Ankit Agarwal	Doctoral student (Ph.D.)	University of Pots Dam, Germany	Shifting paradigm on climate change
3	15.09.2016	Sri. M.S. Srinivasa Reddy	Founder	MNR Associates	Engineer's Day Celebrations
4	01.10.2016	Sri. N. Jagan Mohan Rao	Retd. Chief Engineer	North Coastal	Works carried by Karl Von Terzaghi and importance of foundation in all Civil Engineering Constructions
5	21.10.2016	Dr. DSR Murthy	Professor and Chairman BOS	Andhra University	Case studies on Repairs and Rehabilitations
6	21.10.2016	Dr. Sitarama Raju Sagi	Managing directors	IDDC Engineers Pvt. Ltd	Distress management-Asset Management-Indian Bridge Management Systems (IBMS)
7	22.10.2016	Dr. Amirtham Rajagopal	Associate Professor	IIT Hyderabad	Modeling of CFRP strengthened RCC beam using nonlinear finite element method
8	22.10.2016	Dr. D. Ramaseshu	Professor	NIT Warangal	Condition assessment of structures using NDT methods
9	22.12.2016	Dr. Tejo V Bheemasetti	Post-Doctoral Fellow	University of Texas at Arlington	Current practices and advancements in Insitu testing and site characterization
10	22.12.2016	Sri. Karunakar Kintada	Scientist	National Institute of ocean technology	Hydro-dynamics in daily life

11	10.02.2017	Dr. S. Jayakumar	Principal scientist	National Institute of Oceanography	Application of Civil Engineering to Ocean related Issues
12	30.03.2017	Dr. Y.V.N.K. Murthy	Director	NRSC Hyderabad	Contribution of NRSC in Disaster Management
13	30.03.2017	Dr. Rakesh Khosa	Professor	IIT Delhi	Enigma of Climate: Reality behind the rhetoric of climate change, policy imperatives and what it portends
14	30.03.2017	Dr. M.G. Muni Reddy	Assistant Professor	Andhra University	Study on Mechanical properties of innovative concrete with hybrid mortar made with Epoxy resin, Fly Ash and Quarry dust
15	31.03.2017	Dr. T.V. Praveen	Professor	Andhra University	Stress analysis of sky wheels structure- An alternate container handling system.
16	31.03.2017	Dr. L Suri Naidu	Post-Doctoral Fellow	NU Singapore	Food, Water and Energy Nexus: A global perspective
17	31.03.2017	Dr. Shishir Gaur	Assistant Professor	IIT (BHU)	Application of Simulation Optimization model for management of ground water resources
18	31.03.2017	Dr. Brijesh Kumar Yadav	Associate Professor	IIT Roorkee	Engineered Bio Remediation of LNAPL polluted soil water resources
19	31.03.2017	Dr. GVR Srinivasa Rao	Professor	Andhra University	Multi variate statistical analysis of river water quality- A study on river Godavari in Andhra Pradesh
20	31.03.2017	Dr. KBVN Phanindra	Associate Professor	IIT Hyderabad	Modeling Soil water disease interactions of flood irrigated mandarin orange trees- Role of root distribution parameters

21	01.04.2017	Dr. NV Uma Mahesh	Professor	NIT Warangal	Influence of extreme rainfall extraction methods in the non-stationary rainfall IDF curves
22	01.04.2017	Dr. K. Nagesh Kumar	Professor	IISc Bengaluru	Remote sensing, GIS and DEM for water resources assessment of a river basin
23	01.04.2017	Dr. Y.R.S. Rao	Director	NIH Kakinada	River bank filtration- Potential source for drinking water in coastal Andhra Pradesh
24	08.06.2017	Dr. K. Ramachandra Rao	Professor	IIT Delhi	Road Safety, Accident Analysis and Remedial measures
25	08.06.2017	Sri. N.V. Ramananda Sagar	Chartered Engineer & Valuer	Narnindi Consulting Engineers	Codal Provisions for Designing of Structures
26	27.06.2017	Dr. Srinivas S. Pulugurtha	Professor & graduate program director	University of North Carolina	Road Safety

**Guest lectures arranged for students during the academic year 2016-17**

<b>S.no.</b>	<b>Date of lecture</b>	<b>Title of the lecture</b>	<b>Name and designation of the resource person</b>	<b>Beneficiary</b>
1	07/02/17	Interaction on Power system Analysis	Dr. S.Siva Nagaraju, Director, IIPT & BOS Chairman, Professor of EEE Department. JNTUK	M.Tech. & III B.Tech. students and Faculty
2	13/04/2017.	Over view of Hydro Power Generation in Andhra Pradesh and Hydro Electric Project	by Sri. Y. Chiranjeevi, ADE, AP Transco, Machkund Hydroelectric Joint Scheme, Koraput, Orissa	IInd year EEE students
3	27/02/2017	Thermal Power Station Practices	Sri. V. Srinivasa Rao, ADE, (AE Training Center), NTTPS, Vijayawada	II B.Tech. students and Faculty
4	23/07/2016	Best Practices on O & M and Failure Analysis on AC Machines in industries	Sri. R.N. Ram Babu, Senior Manager, Gujarat State Petroleum Corporation Ltd., Kakinada	III & IV B.Tech. students and Faculty
5	07/10/2016.	Advances in High Voltage Applications	Dr. Abhijit Chakrabarthi, Professor, Indian Institute of Engineering, Science & Technology, Shibpur (Formerly BE College, Shibpur), Howrah, West Bengal	M.Tech. students, III & IV B.Tech. students and Faculty
6	23/09/2016	Applications to Genetic Algorithm (GA)	Dr. D.K.Mohanta, Professor, BITS, Mesra, Ranchi	M.Tech. students, III & IV B.Tech. students and Faculty

	Power- Designing from a CFD perspective	Power,Bengaluru.			
<b>Academic Year 2016-17</b>					
1	Choice based Credit System	Dr. R. Ramesh, Dean R&D MVGRCE, VZM	28-02-17	II B.Tech	125
2	Role of Engineers as Effective Engineering Manager	Dr. Duvvada Rama Prasad, Dy. General Manager (Projects), RINL, Vizag Steel Plant. Visakhapatnam.	20-02-17	III B.Tech	20
3	Emerging trends in building technology	Mr.Subrahmanyam, senior project manager	31-01-17	III B.Tech	120
4	Life Cycle of An Automobile	D. Nischal, Design Engineer, Mercedes Benz Research and Development India Private Limited, Bangalore	06-12-16	III B. Tech IV B. Tech	150
5	Pure Substance	Dr. J. Simhachalam, Deputy General Manager, Powertrain Engineering, ARAI, Pune	25-10-16	II B. Tech	160
6	Acoustic Signature Mitigation Techniques	Sri. V. Rama Krishna, Scientist 'D', NSTL, Visakhapatnam	18-08-16	III B. Tech IV B. Tech	152
7	Alternate Fuel Technologies - Future Emission Regulations and Road Map for India	Dr. S.S. Thipse Deputy Director, Power Train Engineering, ARAI, Pune	01-08-16	III B. Tech IV B. Tech	160
8	Engine Management, Controls, Measurement and Calibration	MrYogesh Kalia Director of Medhaavi Center for Automotive Research, Punjab	01-08-16	III B. Tech IV B. Tech	150
9	Advanced Fuel Efficiency and Combustion Technologies – Fuel efficiency technologies, Combustion	Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune	02-08-16	III B. Tech IV B. Tech	400

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	photography, HCCI, PCCI, GDI, OPOC,				
<b>Academic Year 2015-16</b>					
1	Advances in Manufacturing	Dr. P. Radhakrishnan, Director, PSG College of Engineering and Technology, Coimbatore	05-03-16	III B. Tech IV B. Tech	170
2	Mechanical Circulatory Support Systems in Cardiovascular Fluid Mechanics	Dr. Prasad Patnaik BSV, Dept. of Applied Mechanics IIT Madras	27-02-16	III B. Tech IV B. Tech	160
3	BARC Outreach Programme	Sri. N. Satyanarayana, Scientific Officer G, Accelerator and Pulse Power Division, BARC	02-02-16	IV B. Tech	120
4	Emerging Trends in Manufacturing	Prof. P. N. Rao, University of IOWA, Northern California, U.S.A.	20-07-15 to 21-07- 15	III B. Tech IV B. Tech	150

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## GUEST LECTURES ARRANGED

AY: 2016-17



1) Guest Lecture on “Choice based Credit System” delivered by Dr. R. Ramesh, Dean R&D MVGRCE, VZM on 28-02-17 for II B. Tech students.



2) Guest Lecture on “Role of Engineers as Effective Engineering Manager” delivered by Dr. Duvvada RamaPrasad, Dy. General Manager (Projects), RINL, Vizag Steel Plant, Visakhapatnam on 20-02-17 for III B. Tech students



3) Guest Lecture on “Emerging trends in building technology” delivered by Mr.Subrahmanyam, senior project manager on 31-01-17 for III B. Tech students.

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E-mail: [mechhod.mvgr@gmail.com](mailto:mechhod.mvgr@gmail.com) , [mechhod@mvgrce.edu.in](mailto:mechhod@mvgrce.edu.in)

Web: [www.mvgrce.edu.in](http://www.mvgrce.edu.in)



4) Guest Lecture on “Life Cycle of An Automobile” delivered by D. Nischal, Design Engineer, Mercedes Benz Research and Development India Private Limited, Bangalore on 06-12-16 for III B. Tech and IV B. Tech students.



5) Guest Lecture on “Pure Substance” delivered by Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune on 25-10-16 for II B. Tech. students.



6) Guest Lecture on “Acoustic Signature Mitigation Techniques” by Sri. V. Rama Krishna, Scientist 'D', NSTL, Visakhapatnam, conducted on 18-08-16 for III B. Tech & IV B. Tech students



7) Guest Lecture on “Alternate Fuel Technologies - Future Emission Regulations and Road Map for India” by Dr. S.S. Thipse, Deputy Director, Power Train Engineering, ARAI, Pune, conducted on 01-08-16 for III B. Tech & IV B. Tech students.



8) Guest Lecture on “Engine Management, Controls, Measurement and Calibration” by Mr. Yogesh Kalia, Director of Medhaavi Center for Automotive Research, Punjab conducted on 01-08-16 for III B. Tech & IV B. Tech students.



9) Guest Lecture on “Alternative fuel efficiency technologies” Dr. J. Simhachalam Deputy General Manager, Powertrain Engineering, ARAI, Pune on 02-08-16 for III B. Tech & IV B. Tech students

**AY 2016-17**

## Guest lectures

AY 2016-17

S.No.	Title	Resource person	Date	Target audience
1	Internet of Things ( I o T )	Dr.Thinagaran Perumal Sr.Lecturer University Putra. Malaysia	30.07.16	III & IV B.Tech
2	Antenna Miniaturization Techniques	Dr.M.Chakravarthy Scientist – G, DLRL, Hyderabad.	17.09.16	III Year B.Tech
3	Antenna Measurements	Prof. N.V.S.N. Sharma, Dept.of ECE, NIT, Warangal Warangal.	17.09.16	IV Year B.Tech

### 1. Internet of Things



Dr.Thinagaran Perumal, Sr.Lecturer, University Putra, Malaysia had delivered a guest lecture on Internet of Things.

List of students attended

S.No	Regd. No	Name of the Student
1	12331A0432	CHANDAKA SRINIVASA RAO
2	12331A0433	CHANDALA SANKAR
3	13331A0401	ADDATRAO RAJA SATHEESH

4	13331A0404	ALLADA TIRUMALESH
5	13331A0407	APPIKONDA KIRAN BABU
6	13331A0408	ARASADA SANHITA
7	13331A0409	ARASAVILLI SARALA
8	13331A0410	AVUGADDI SRIKHAR
9	13331A0413	BAMMIDI HEMANTHKUMAR
10	13331A0415	BEVARA HEMANTHA NAIDU
11	13331A0416	BHERI YUVA SRINIVAS RAJA
12	13331A0417	BHOGAVILLI ASHRITHA
13	13331A0418	BODAPATI MERCY DEEPIKA
14	13331A0421	BURLE NAVEENA ROSE
15	13331A0424	CHALUMURI SOWJANYA
16	13331A0427	CHINTADA SUDHEER
17	13331A0428	CHINTALAPUDI TEJASRI
18	13331A0430	DADI YAMINI SURYA DEEPIKA
19	13331A0431	DALAI PAVAN KUMAR
20	13331A0432	DEVABATTULA VENKATA NAGA HARSHITH
21	13331A0436	DUNABOYINA KIRANMAYE
22	13331A0437	FARHAT NASREEN
23	13331A0440	GANDI RAMALAKSHMI
24	13331A0441	GANUGULA HARIKA
25	13331A0443	GASADI SAI PRASAD
26	13331A0444	GAVARA CHAKRAVARTHI
27	13331A0445	GEDALA RAMA SATYA SURAMMA SANTOSH KUMAR
28	13331A0446	GIRADA MEGHANA
29	13331A0451	HARSHA SREE CHINTAKAYALA
30	13331A0452	HEMANTH KUMAR BOTCHA
31	13331A0454	JARAJAPU MOWNICA DEVI
32	13331A0455	JASTHI AISHWARYA
33	13331A0457	JOGA CHANDRIKA VANDANA SAI SUDHA
34	13331A0458	K JAYANT
35	13331A0460	KALISSETTY SUSMITHA
36	13331A0461	KALLEPALLI VENKATA RAVI TEJA
37	13331A0463	KARRI TARAKESWARA RAO
38	13331A0468	KOMMI BINDU VARDANI
39	13331A0470	KONCHADA DHARMENDRA

40	13331A0473	KOTHALANKA VENKATA SAIPRASANTH
41	13331A0474	KOYYA GAYATRI
42	13331A0477	KURMANA SHARON MONICA
43	13331A0478	LABALA ASHA CHOWDARY
44	13331A0480	MADEM SAISANDEEPKUMAR
45	13331A0482	MAKARLA SNIGDHA
46	13331A0484	MARRA ASWINI NAGA LAXMI
47	13331A0486	MAVURI REVANTH KUMAR
48	13331A0487	MIDATHANA GANESH
49	13331A0488	MIRIYALA UDAY KUMAR
50	13331A0490	MOHAMMAD ISMAIL
51	13331A0493	MOOGI MEENAKSHI
52	13331A0498	NAKKA MOUNIKA
53	13331A0499	NALLAPU SAI PRAVEEN
54	13331A04A1	NAMBURI SRI SAI SOWMYA
55	13331A04A2	NANDURI SAI PRUDHVI RAJ
56	13331A04A3	NARALA VIJAYA LAKSHMI
57	13331A04A5	NEELAGIRI ASHOKCHANDRA
58	13331A04A6	NISHANT NEKKANTI
59	13331A04A9	PADI ARUN KUMAR
60	13331A04B0	PAILA USHA KIRAN
61	13331A04B1	PALLI SRICHANDRAHAAS
62	13331A04B2	PANDI SAI MANI CHANDAN
63	13331A04B3	PANDITHI SAI NIKHILA
64	13331A04B5	PASAGADA SESA SAI SRIKAR
65	13331A04B6	PATAKAMSETTI LAKSHMI PRASANNA
66	13331A04B7	PATHIVADA AKHILA
67	13331A04C1	PENDYALA SREE PRANEETHA
68	13331A04C2	PENTA GOWTHAMI
69	13331A04C3	PENTAKOTA JAGADISH RAO
70	13331A04C5	PERLI GOPICHAND
71	13331A04C6	PILLI BOSU BABU
72	13331A04C7	PINDI SRINIVASA SHANMUKHA SIDDHARTHA
73	13331A04C9	PONNADA CHANDRAMOULI
74	13331A04D0	PONNAPALLI VENKATANAGAPRAVALLIKA
75	13331A04D4	PUTHI SRI NAGA VANI

76	13331A04D5	RACHERLA SWATHI
77	13331A04D6	RACHURI SRAVANI
78	13331A04D7	REDDI SAILAKSHMI
79	13331A04D8	REVV DURGA PRASAD
80	13331A04E1	ROUTHULA SATYANARAYANA MURTHY
81	13331A04E2	SAITHALA NAVEEN
82	13331A04E3	SAMBHUMAHANATHI KOTEESWARA GOWREE KUMAR
83	13331A04E7	SATTARU DINESH KUMAR
84	13331A04E8	SAYYAPARAJU SOMA RAJU
85	13331A04E9	SHAIK ASHRAF ALI KHAN
86	13331A04F2	SURAGALA MOONI PRANEETHA
87	13331A04F3	SURAJ IPPILI
88	13331A04F8	TEKUMUDI BHARGAVI SAI SATYA SRI
89	13331A04F9	TENNETI MOWNIKA
90	13331A04G0	TUMBALI RAVEENDRA KUMAR
91	13331A04G1	UPADHYAYULA SIRISHA
92	13331A04G2	VADAMODULA MUKHANDAR
93	13331A04G5	VARADHA SHANTHI PRIYA
94	13331A04G8	VENKATA KRISHNA KUMAR CHITROTHU
95	13331A04G9	VENKATESWARA RAO DABBERU
96	13331A04H0	VENKUMAHANTI JAYA PRASHANTH
97	13331A04H2	VILLA SIVA RAMESH
98	13331A04H3	VOONA SNEHA
99	13331A04H5	VULLI ANISHA
100	13331A04H7	YEGIREDDI SANDHYARANI
101	13331A04I0	YINJARAPU SURAJ VIHARI
102	14335A0402	AMBATI BALA NARENDRA
103	14335A0404	ATTADA VISHNU
104	14335A0405	BARNALA CHINNAMMALU
105	14335A0406	BODELA VINEELA ROSES
106	14335A0409	CHITIKELA UDAY KUMAR
107	14335A0410	DANGETI SAI KUMAR
108	14335A0414	SETTY PRADEEP AYYAPPA
109	14335A0415	KANKIPATI SURYA PRAKASH PADAL
110	14335A0417	KOMPELLA SRI KRISHNA SAMYAMI SARMA
111	14335A0418	KORRA DEVADASU

112	14335A0422	MARUPILLI APPA RAO
113	14335A0424	PADALA VENKATA SIVA RAMA REDDY
114	14335A0425	PAKKI SRAVAN KUMAR
115	14335A0426	PENTAKOTA PAVAN KUMAR
116	14335A0431	SIRIGIDI MANIKANTHA
117	14335A0433	TELUGU JAYAPRAKASH
118	13331A0425	CHENDA ARUN HYDE
119	13331A04H6	VUPPU JAGADESH AKHIL
120	14331A0401	A VASANTHA MANJARI
121	14331A0402	ADAPA RAMA RAO
122	14331A0405	AGRAPU VAMSI KRISHNA YADAV
123	14331A0407	AMITI SRI HARSHA
124	14331A0408	AMUJURU SAI VENKATA KRISHNA VAMSI
125	14331A0409	ANUPOJU SRIKAVYA
126	14331A0410	ATTADA HARISH
127	14331A0411	AYI MANEESH
128	14331A0413	BADIPATLA NANDINI
129	14331A0414	BADRI VENKATA TARUNI
130	14331A0415	BANAM MANISHA
131	14331A0416	BANDARU SOWMYA
132	14331A0420	BEERA JESSY ROSSANNA
133	14331A0421	BELLALA VINEELA
134	14331A0424	BOMMULURI DIVYA HARSHINI
135	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA
136	14331A0426	BOTCHA DIVYA
137	14331A0427	BOTTA SAI RAM PAVAN KUMAR YADAV
138	14331A0428	BUDDHARAJU VINEETH VARMA
139	14331A0429	BURLI MOUNICA
140	14331A0430	CHALLA TEJA
141	14331A0433	D SAI GOUTHAM
142	14331A0434	DADI ARAVIND
143	14331A0435	DANDU S S V A RAGHURAM VARMA
144	14331A0436	DANTULURI RACHANA
145	14331A0437	DATTI GAYATHRI
146	14331A0438	DAVULURI VENKATA UPENDRA
147	14331A0439	DOMMISI GOUTAM RAJU

148	14331A0449	GANTYADA RAGINI
149	14331A0450	GARIMELLA VENKATA SAI SASHANK
150	14331A0451	GAYATHRI ALLURI
151	14331A0452	GODABA RAMYA
152	14331A0453	GODULA SETUYAMINI
153	14331A0454	GOLLA JERUSHA MANOAH
154	14331A0455	GOLLANGI HEMANTH KUMAR
155	14331A0456	GONNABATHULA JAGADISH KUMAR
156	14331A0458	GORLE NARAYANA RAO
157	14331A0459	GRANDHI LOVA SRI SWETHA
158	14331A0460	GRANDHI SRAVANI
159	14331A0461	GUDIVADA SAI PRAVALLIKA
160	14331A0462	GUJJU CHAITANYA KUMAR REDDY
161	14331A0463	GULLIPALLI NAGENDRA KUMAR
162	14331A0464	GURU POORNA CHANDRA RAO
163	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
164	14331A0469	JASMINE
165	14331A0470	KALISSETTY TEJESWAR
166	14331A0474	KANDUKOORI VAMSI KUMAR
167	14331A0475	KAPALA LIPESH
168	14331A0478	KASA NAGASREE
169	14331A0479	KATHULA GANDHANA
170	14331A0482	KOLATI SRIKAR
171	14331A0485	KOLLURU KARTHIK
172	14331A0486	KONDETI SIVA KALI YOGESH
173	14331A0488	KORABU SREE MOURYA SAGAR
174	14331A0489	KORIBILLI CHAITANYA
175	14331A0492	KOTTU LAKSHMI SAI PRASANTH
176	14331A0495	LACHIREDDI AKHILA
177	14331A0496	LAKHINENI SAMEER
178	14331A04A0	MAJJI HIMA PRASANNA KUMAR RAJA
179	14331A04A1	MAJJI MOHAN BABU
180	14331A04A2	MAKIREDDY RAJULA NAIDU
181	14331A04A5	MANDI UDAY BASKHAR
182	14331A04A6	MANGA NIKHILA
183	14331A04B2	MAVURU GEETHASREE

184	14331A04B3	MEDISETTY HEMANTH KUMAR
185	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
186	14331A04B7	MOHAMMAD RAZAULLAH
187	14331A04B8	MOHAMMAD SHABBIR ALI
188	14331A04C0	MUNGI SRI KANTH
189	14331A04C1	MUTTA VENKATESH
190	14331A04C6	NANDAKADORA RAMA KRISHNA
191	14331A04C7	NANDIRAJU VYSHNAVI POOJA
192	14331A04C8	NETTAM PRASANNA KUMAR CHOWDARY
193	14331A04D3	PALLA BHAVANA
194	14331A04D4	PEKALA HARSHA PRIYA
195	14331A04D6	PENTAPATI VIJAYA LAKSHMI
196	14331A04D7	PILLA DHIRAJ SRIHARSHA
197	14331A04E0	POTHAKAMURI UDAY
198	14331A04E2	PYDI SUNIL KUMAR
199	14331A04E3	PYLA SAI DILEEP
200	14331A04E4	RAGHUMANDA SOWJANYA
201	14331A04E7	REDDY SAI DEEPAK
202	14331A04E8	RUNKANA PUSHPAK
203	14331A04F1	SHAIK SAMEENA TASNEEM
204	14331A04F2	SHEIK NASREEN SULTHANA
205	14331A04F4	SIDDHAMSETTI DIVYA
206	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
207	14331A04F9	SOMU ABHIRAM
208	14331A04G0	SONTYANA GANESH

## 2. Antenna Miniaturization Techniques



Dr.M.Chakravarthy, Scientist – G, DLRL, Hyderabad had delivered a guest lecture on Antenna Miniaturization Techniques.

List of students attended

S.No	Regd. No	Name of the Student
1	13331A0425	CHENDA ARUN HYDE
2	13331A04H6	VUPPU JAGADESH AKHIL
3	14331A0401	A VASANTHA MANJARI
4	14331A0402	ADAPA RAMA RAO
5	14331A0403	ADIMULAM MAHESWARI
6	14331A0404	ADIVARAPU RAVINDRA
7	14331A0406	AKETI VENKAT GANESH KUMAR
8	14331A0409	ANUPOJU SRIKAVYA
9	14331A0410	ATTADA HARISH
10	14331A0411	AYI MANEESH
11	14331A0412	BADIGANTI KARTHIK
12	14331A0413	BADIPATLA NANDINI
13	14331A0415	BANAM MANISHA
14	14331A0416	BANDARU SOWMYA
15	14331A0418	BARATAM SRIJA
16	14331A0420	BEERA JESSY ROSSANNA
17	14331A0421	BELLALA VINEELA
18	14331A0422	BHAMIDI RAMA SUBRAHMANYA BHARADWAJ
19	14331A0423	BOLLA SHARMISTA
20	14331A0424	BOMMULURI DIVYA HARSHINI
21	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA

22	14331A0426	BOTCHA DIVYA
23	14331A0427	BOTTA SAI RAM PAVAN KUMAR YADAV
24	14331A0428	BUDDHARAJU VINEETH VARMA
25	14331A0429	BURLI MOUNICA
26	14331A0430	CHALLA TEJA
27	14331A0431	CHAPPA NAGA VENKATA SAI RAVITEJA
28	14331A0432	CHEEPURUPALLI SANDHYA
29	14331A0433	D SAI GOUTHAM
30	14331A0434	DADI ARAVIND
31	14331A0435	DANDU S S V A RAGHURAM VARMA
32	14331A0436	DANTULURI RACHANA
33	14331A0437	DATTI GAYATHRI
34	14331A0438	DAVULURI VENKATA UPENDRA
35	14331A0439	DOMMISI GOUTAM RAJU
36	14331A0441	EMANDI SINDHUSHA
37	14331A0442	GADI SAI SAMEER
38	14331A0444	GANGAVAMSAM MANAS SAI CHARAN
39	14331A0445	GANNAVARAPU KASHYAP
40	14331A0446	GANTI MAHAPATRUNI SOWJANYA
41	14331A0447	GANTI SRI NAGA SAI AJAY KAMAL
42	14331A0449	GANTYADA RAGINI
43	14331A0450	GARIMELLA VENKATA SAI SASHANK
44	14331A0451	GAYATHRI ALLURI
45	14331A0453	GODULA SETUYAMINI
46	14331A0454	GOLLA JERUSHA MANOAH
47	14331A0455	GOLLANGI HEMANTH KUMAR
48	14331A0457	GORAKALA SAGAR
49	14331A0458	GORLE NARAYANA RAO
50	14331A0459	GRANDHI LOVA SRI SWETHA
51	14331A0460	GRANDHI SRAVANI
52	14331A0461	GUDIVADA SAI PRAVALLIKA
53	14331A0462	GUJJU CHAITANYA KUMAR REDDY
54	14331A0463	GULLIPALLI NAGENDRA KUMAR
55	14331A0464	GURU POORNA CHANDRA RAO
56	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
57	14331A0466	INDANA YESWANTH
58	14331A0467	JAMI SUNEETHA
59	14331A0468	JANGA DIVYA
60	14331A0469	JASMINE
61	14331A0470	KALISSETTY TEJESWAR
62	14331A0471	KAMMILA SUKESH SREE NAGA SAI
63	14331A0472	KAMUJU SATYA DURGA SUPRIYA
64	14331A0473	KANDIPILLI S V C JAHNAVI MRUDULA

65	14331A0474	KANDUKOORI VAMSI KUMAR
66	14331A0475	KAPALA LIPESH
67	14331A0476	KAPUGANTI SURYA TEJA
68	14331A0479	KATHULA GANDHANA
69	14331A0480	KINJARAPU GEETANJALI
70	14331A0481	KINTHALI VINAY KUMAR
71	14331A0482	KOLATI SRIKAR
72	14331A0483	KOLLA THARUN
73	14331A0484	KOLLI HARI KRISHNA
74	14331A0485	KOLLURU KARTHIK
75	14331A0488	KORABU SREE MOURYA SAGAR
76	14331A0490	KORLA SRICHANDRAVINEELA
77	14331A0491	KORRAYI SANTHOSH
78	14331A0492	KOTTU LAKSHMI SAI PRASANTH
79	14331A0493	KOYYA NUTHAN
80	14331A0494	KUTCHARLAPATI NAVEEN BHARGAVA VARMA
81	14331A0495	LACHIREDDI AKHILA
82	14331A0496	LAKHINENI SAMEER
83	14331A0498	MAHANTHI LAVANYA
84	14331A04A0	MAJJI HIMA PRASANNA KUMAR RAJA
85	14331A04A1	MAJJI MOHAN BABU
86	14331A04A3	MANDAPATI SEETHARAMA RAJU
87	14331A04A4	MANDAPATI VIKASH VARMA
88	14331A04A5	MANDI UDAY BASKHAR
89	14331A04A6	MANGA NIKHILA
90	14331A04A7	MANYAM INDRAJA
91	14331A04A8	MARADA GNANESWARI
92	14331A04A9	MAREDDY SRILEKHA
93	14331A04B0	MAREMANDA VENKATA TULASIRAM
94	14331A04B1	MARISARLA IVAN JOEL
95	14331A04B2	MAVURU GEETHASREE
96	14331A04B3	MEDISSETTY HEMANTH KUMAR
97	14331A04B4	MEDURI V L SAI SREE
98	14331A04B5	MIRIYALA SAIKRISHNA
99	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
100	14331A04B7	MOHAMMAD RAZAULLAH
101	14331A04B8	MOHAMMAD SHABBIR ALI
102	14331A04B9	MONGAM SURYA
103	14331A04C0	MUNGI SRI KANTH
104	14331A04C1	MUTTA VENKATESH
105	14331A04C2	MYSARLLA LOHITH
106	14331A04C3	NAIDANA NISHANT
107	14331A04C4	NALLA LAKSHMANA RAO

108	14331A04D0	NISTALA SAI SUSHANTH
109	14331A04D1	PADALA SATISH KUMAR REDDY
110	14331A04D2	PADAM LAKSHMI CHAITANYA KRISHNAM NAIDU
111	14331A04D3	PALLA BHAVANA
112	14331A04D4	PEKALA HARSHA PRIYA
113	14331A04D5	PENTAPATI PRATHYUSHA
114	14331A04D6	PENTAPATI VIJAYA LAKSHMI
115	14331A04D7	PILLA DHIRAJ SRIHARSHA
116	14331A04D8	PODUGU MEENAKSHI
117	14331A04D9	PONNADA GOWRI SANKAR BALAJI
118	14331A04E9	SAINATH RAVI BEHARA
119	14331A04F0	SELAGAMSETTY NEELIMA
120	14331A04F1	SHAIK SAMEENA TASNEEM
121	14331A04F2	SHEIK NASREEN SULTHANA
122	14331A04F3	SIDDAVARAPU SONIA
123	14331A04F4	SIDDHAMSETTI DIVYA
124	14331A04F5	SINGIDI SAI BHARATH
125	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
126	14331A04F7	SIYYADRI DEVANANDA KISHORE
127	14331A04F8	SODUM MANOJ KUMAR REDDY
128	14331A04F9	SOMU ABHIRAM
129	14331A04G0	SONTYANA GANESH
130	14331A04G1	SONTYANA LALITH SAI
131	14331A04G2	SOWMYA PUPPALA
132	14331A04G3	SRINIVASA RAO MOTURI
133	14331A04G4	SRUNGARAMVENKATABUCHI SRIVEENA
134	14331A04G5	TARIGOPPULA RAHUL
135	14331A04G6	VADDADI SAI SANDEEP
136	14331A04G7	VAJRAGADA PRADEEP KUMUR
137	14331A04H3	VEMULAPUDI BALU KIRANKUMAR
138	14331A04H4	VIKRAM SHANMUKH SATYA PRABHU TEJ
139	14331A04H5	YAJJALA ANNIE SUHASINI
140	14331A04H6	YANDA BHARAT SAI CHARAN
141	14331A04H7	YAVARNA RISHITHA
142	14331A04H8	YELURI KAVYA SRI SIVA SAI
143	14331A04H9	YERRA DEMUDU NAIDU
144	15335A0404	BAGGAM RADHA RAMANI
145	15335A0405	BODDEDA RAMYA DEVI
146	15335A0406	BONI MANOJ
147	15335A0407	BONU AKHILASREE
148	15335A0408	CHAKKA RAJESH
149	15335A0409	CHALUMURI RAMYA

150	15335A0410	CHIPPADA YUGANDHAR
151	15335A0411	DADI NARAYANA PRADEEP KUMAR
152	15335A0412	DUDDU SUCHITHA
153	15335A0413	GEDELA ASHOK KUMAR
154	15335A0414	GONDHI SEETHA DEVI
155	15335A0415	GORLE SRAVANI
156	15335A0416	HANUMANTHU NAVEEN
157	15335A0417	KANTA NAVEEN
158	15335A0418	KINTADA ATCHYUTA RAO
159	15335A0420	KOTHA KASI SURYA SAI MANIKANTA
160	15335A0421	MANCHIPILLI RAMMOHAN
161	15335A0422	MATTALA SATEESH
162	15335A0423	MATTAPALLI KIRANMAYI ANDAL
163	15335A0424	MATURU SAIGUPTA
164	15335A0425	PADALA HARIKA

### 3. Antenna Measurements



Prof.N.V.S.N.Sharma, Dept.of ECE, NIT, Warangal had delivered a guest lecture on Antenna Measurements.

#### List of students attended

S.No	Regd. No	Name of the Student
1	12331A0432	CHANDAKA SRINIVASA RAO
2	12331A0433	CHANDALA SANKAR
3	13331A0401	ADDATRAO RAJA SATHEESH
4	13331A0404	ALLADA TIRUMALESH

5	13331A0407	APPIKONDA KIRAN BABU
6	13331A0408	ARASADA SANHITA
7	13331A0409	ARASAVILLI SARALA
8	13331A0410	AVUGADDI SRIKHAR
9	13331A0413	BAMMIDI HEMANTHKUMAR
10	13331A0415	BEVARA HEMANTHA NAIDU
11	13331A0416	BHERI YUVA SRINIVAS RAJA
12	13331A0417	BHOGAVILLI ASHRITHA
13	13331A0418	BODAPATI MERCY DEEPIKA
14	13331A0421	BURLE NAVEENA ROSE
15	13331A0424	CHALUMURI SOWJANYA
16	13331A0427	CHINTADA SUDHEER
17	13331A0428	CHINTALAPUDI TEJASRI
18	13331A0430	DADI YAMINI SURYA DEEPIKA
19	13331A0431	DALAI PAVAN KUMAR
20	13331A0432	DEVABATTULA VENKATA NAGA HARSHITH
21	13331A0436	DUNABOYINA KIRANMAYE
22	13331A0437	FARHAT NASREEN
23	13331A0440	GANDI RAMALAKSHMI
24	13331A0441	GANUGULA HARIKA
25	13331A0443	GASADI SAI PRASAD
26	13331A0444	GAVARA CHAKRAVARTHI
27	13331A0445	GEDALA RAMA SATYA SURAMMA SANTOSH KUMAR
28	13331A0446	GIRADA MEGHANA
29	13331A0451	HARSHA SREE CHINTAKAYALA
30	13331A0452	HEMANTH KUMAR BOTCHA
31	13331A0454	JARAJAPU MOWNICA DEVI
32	13331A0455	JASTHI AISHWARYA
33	13331A0457	JOGA CHANDRIKA VANDANA SAI SUDHA
34	13331A0458	K JAYANT
35	13331A0460	KALISSETTY SUSMITHA
36	13331A0461	KALLEPALLI VENKATA RAVI TEJA
37	13331A0463	KARRI TARAKESWARA RAO
38	13331A0468	KOMMI BINDU VARDANI
39	13331A0470	KONCHADA DHARMENDRA
40	13331A0473	KOTHALANKA VENKATA SAIPRASANTH

41	13331A0474	KOYYA GAYATRI
42	13331A0477	KURMANA SHARON MONICA
43	13331A0478	LABALA ASHA CHOWDARY
44	13331A0480	MADEM SAISANDEEPKUMAR
45	13331A0482	MAKARLA SNIGDHA
46	13331A0484	MARRA ASWINI NAGA LAXMI
47	13331A0486	MAVURI REVANTH KUMAR
48	13331A0487	MIDATHANA GANESH
49	13331A0488	MIRIYALA UDAY KUMAR
50	13331A0490	MOHAMMAD ISMAIL
51	13331A0493	MOOGI MEENAKSHI
52	13331A0498	NAKKA MOUNIKA
53	13331A0499	NALLAPU SAI PRAVEEN
54	13331A04A1	NAMBURI SRI SAI SOWMYA
55	13331A04A2	NANDURI SAI PRUDHVI RAJ
56	13331A04A3	NARALA VIJAYA LAKSHMI
57	13331A04A5	NEELAGIRI ASHOKCHANDRA
58	13331A04A6	NISHANT NEKKANTI
59	13331A04A9	PADI ARUN KUMAR
60	13331A04B0	PAILA USHA KIRAN
61	13331A04B1	PALLI SRICHANDRAHAAS
62	13331A04B2	PANDI SAI MANI CHANDAN
63	13331A04B3	PANDITHI SAI NIKHILA
64	13331A04B5	PASAGADA SESA SAI SRIKAR
65	13331A04B6	PATAKAMSETTI LAKSHMI PRASANNA
66	13331A04B7	PATHIVADA AKHILA
67	13331A04C1	PENDYALA SREE PRANEETHA
68	13331A04C2	PENTA GOWTHAMI
69	13331A04C3	PENTAKOTA JAGADISH RAO
70	13331A04C5	PERLI GOPICHAND
71	13331A04C6	PILLI BOSU BABU
72	13331A04C7	PINDI SRINIVASA SHANMUKHA SIDDHARTHA
73	13331A04C9	PONNADA CHANDRAMOULI
74	13331A04D0	PONNAPALLI VENKATANAGAPRAVALLIKA
75	13331A04D4	PUTHI SRI NAGA VANI
76	13331A04D5	RACHERLA SWATHI

77	13331A04D6	RACHURI SRAVANI
78	13331A04D7	REDDI SAILAKSHMI
79	13331A04D8	REVV DURGA PRASAD
80	13331A04E1	ROUTHULA SATYANARAYANA MURTHY
81	13331A04E2	SAITHALA NAVEEN
82	13331A04E3	SAMBHUMAHANATHI KOTEESWARA GOWREE KUMAR
83	13331A04E7	SATTARU DINESH KUMAR
84	13331A04E8	SAYYAPARAJU SOMA RAJU
85	13331A04E9	SHAIK ASHRAF ALI KHAN
86	13331A04F2	SURAGALA MOONI PRANEETHA
87	13331A04F3	SURAJ IPPILI
88	13331A04F8	TEKUMUDI BHARGAVI SAI SATYA SRI
89	13331A04G5	VARADHA SHANTHI PRIYA
90	13331A04G8	VENKATA KRISHNA KUMAR CHITROTHU
91	13331A04G9	VENKATESWARA RAO DABBERU
92	13331A04H0	VENKUMAHANTI JAYA PRASHANTH
93	13331A04H2	VILLA SIVA RAMESH
94	13331A04H3	VOONA SNEHA
95	13331A04H5	VULLI ANISHA
96	13331A04H7	YEGIREDDI SANDHYARANI
97	13331A04I0	YINJARAPU SURAJ VIHARI
98	14335A0402	AMBATI BALA NARENDRA
99	14335A0404	ATTADA VISHNU
100	14335A0405	BARNALA CHINNAMMALU
101	14335A0406	BODELA VINEELA ROSES
102	14335A0409	CHITIKELA UDAY KUMAR
103	14335A0410	DANGETI SAI KUMAR
104	14335A0414	SETTY PRADEEP AYYAPPA
105	14335A0415	KANKIPATI SURYA PRAKASH PADAL
106	14335A0417	KOMPELLA SRI KRISHNA SAMYAMI SARMA
107	14335A0418	KORRA DEVADASU
108	14335A0422	MARUPILLI APPA RAO
109	14335A0424	PADALA VENKATA SIVA RAMA REDDY
110	14335A0425	PAKKI SRAVAN KUMAR
111	14335A0426	PENTAKOTA PAVAN KUMAR
112	14335A0431	SIRIGIDI MANIKANTHA

113	14335A0433	TELUGU JAYAPRAKASH
114	13331A0425	CHENDA ARUN HYDE
115	13331A04H6	VUPPU JAGADESH AKHIL
116	14331A0401	A VASANTHA MANJARI
117	14331A0402	ADAPA RAMA RAO
118	14331A0405	AGRAPU VAMSI KRISHNA YADAV
119	14331A0407	AMITI SRI HARSHA
120	14331A0408	AMUJURU SAI VENKATA KRISHNA VAMSI
121	14331A0409	ANUPOJU SRIKAVYA
122	14331A0410	ATTADA HARISH
123	14331A0411	AYI MANEESH
124	14331A0413	BADIPATLA NANDINI
125	14331A0414	BADRI VENKATA TARUNI
126	14331A0415	BANAM MANISHA
127	14331A0416	BANDARU SOWMYA
128	14331A0420	BEERA JESSY ROSSANNA
129	14331A0421	BELLALA VINEELA
130	14331A0424	BOMMULURI DIVYA HARSHINI
131	14331A0430	CHALLA TEJA
132	14331A0433	D SAI GOUTHAM
133	14331A0434	DADI ARAVIND
134	14331A0435	DANDU S S V A RAGHURAM VARMA
135	14331A0436	DANTULURI RACHANA
136	14331A0437	DATTI GAYATHRI
137	14331A0438	DAVULURI VENKATA UPENDRA
138	14331A0439	DOMMISI GOUTAM RAJU
139	14331A0449	GANTYADA RAGINI
140	14331A0450	GARIMELLA VENKATA SAI SASHANK
141	14331A0451	GAYATHRI ALLURI
142	14331A0452	GODABA RAMYA
143	14331A0453	GODULA SETUYAMINI
144	14331A0454	GOLLA JERUSHA MANOAH
145	14331A0455	GOLLANGI HEMANTH KUMAR
146	14331A0456	GONNABATHULA JAGADISH KUMAR
147	14331A0458	GORLE NARAYANA RAO
148	14331A0459	GRANDHI LOVA SRI SWETHA

149	14331A0460	GRANDHI SRAVANI
150	14331A0461	GUDIVADA SAI PRAVALLIKA
151	14331A0462	GUJJU CHAITANYA KUMAR REDDY
152	14331A0463	GULLIPALLI NAGENDRA KUMAR
153	14331A0464	GURU POORNA CHANDRA RAO
154	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
155	14331A0469	JASMINE
156	14331A0470	KALISSETTY TEJESWAR
157	14331A0474	KANDUKOORI VAMSI KUMAR
158	14331A0475	KAPALA LIPESH
159	14331A0478	KASA NAGASREE
160	14331A0479	KATHULA GANDHANA
161	14331A0482	KOLATI SRIKAR
162	14331A0485	KOLLURU KARTHIK
163	14331A0486	KONDETI SIVA KALI YOGESH
164	14331A0488	KORABU SREE MOURYA SAGAR
165	14331A0489	KORIBILLI CHAITANYA
166	14331A0492	KOTTU LAKSHMI SAI PRASANTH
167	14331A0495	LACHIREDDI AKHILA
168	14331A0496	LAKHINENI SAMEER
169	14331A04A0	MAJJI HIMA PRASANNA KUMAR RAJA
170	14331A04A1	MAJJI MOHAN BABU
171	14331A04A2	MAKIREDDY RAJULA NAIDU
172	14331A04A5	MANDI UDAY BASKHAR
173	14331A04A6	MANGA NIKHILA
174	14331A04B2	MAVURU GEETHASREE
175	14331A04B3	MEDISETTY HEMANTH KUMAR
176	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
177	14331A04B7	MOHAMMAD RAZAULLAH
178	14331A04B8	MOHAMMAD SHABBIR ALI
179	14331A04C1	MUTTA VENKATESH
180	14331A04C6	NANDAKADORA RAMA KRISHNA
181	14331A04C7	NANDIRAJU VYSHNAVI POOJA
182	14331A04C8	NETTAM PRASANNA KUMAR CHOWDARY
183	14331A04D4	PEKALA HARSHA PRIYA
184	14331A04D6	PENTAPATI VIJAYA LAKSHMI

185	14331A04D7	PILLA DHIRAJ SRIHARSHA
186	14331A04E0	POTHAKAMURI UDAY
187	14331A04E2	PYDI SUNIL KUMAR
188	14331A04E3	PYLA SAI DILEEP
189	14331A04E4	RAGHUMANDA SOWJANYA
190	14331A04E7	REDDY SAI DEEPAK
191	14331A04E8	RUNKANA PUSHPAK
192	14331A04F1	SHAIK SAMEENA TASNEEM
193	14331A04F2	SHEIK NASREEN SULTHANA
194	14331A04F4	SIDDHAMSETTI DIVYA
195	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
196	14331A04F9	SOMU ABHIRAM
197	14331A04G0	SONTYANA GANESH

**Department: CSE**

**Criteria: 1.1.1**

**2016-17**

**Guest Lectures arranged**

<b>Sno</b>	<b>Date</b>	<b>Title</b>	<b>Venue</b>	<b>Participants</b>	<b>Summary</b>
1	27/08/2016	Trends in Internet	Seminar Hall, CSE, MVGRCE(A)	35	Dr. B.Srinivas, Assoc. Prof, CSE, MVGRCE has addressed the students on various trends of internet on 27th August 2016 at CSE Seminar hall. He shared various opportunities growing around distributed computing and internet technologies with the participants.

**Academic Year (2016-17)**

<b>S. No</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	04/01/2017	Sri. Kondala Ruthala	Chairman & Director	Benaka Biotechnologies, U.S.A	Latest upcoming Trends In Biogas Plants
2	25/03/2017	Sri E.Esakki Ram Kumar	Plant Head, Associate Vice President	Eisai Pharmaceuticals India Pvt. Ltd, Parawada, Visakhapatnam	Career Opportunities for Chemical Engineers in Pharmaceutical Industries

**Academic Year (2016-17) S.No 1:**

**Title of the Guest Lecture:** Latest upcoming Trends In Biogas Plants

**Description of the Guest Lecture:**

Alternatives in biofuels today include three main sources of renewable energy derived from biomass: biodiesel, bioethanol, and biogas. Biofuels can be first generation (produced from food crops; using sugars, starches, and vegetable oils) or second generation (produced from all forms of lignocellulosic biomass) fuels. Renewable energy production from energy crops and agricultural or industrial waste or wastewater; for example, crops and agricultural residues, domestic wastewater, industrial wastewater, sewage sludge, and animal manure, is a viable solution because it provides the correct destination for various types of waste and facilitates energy production. This guest lecture presented an overview of biogas production, as well as applications for an efficient bioenergy recovery from anaerobic systems. Aspects regarding renewable energy sources, anaerobic processes, and biogas production, including some characteristics of biogas purification and upgrading, are presented. Overall, this guest lecture compiled critical information to better understand the potential of anaerobic biodigestion as a robust processing step for bioenergy production.

**Academic Year (2016-17) S.No 2:**

**Title of the Guest Lecture:** Career Opportunities for Chemical Engineers in Pharmaceutical Industries

**Description of the Guest Lecture:**

Pharmaceutical compounds are synthesized by very complicated chemical processes or extracted from natural products. These are chemical engineering processes. The extraction of active ingredients from complex mixtures of side products (many of them harmful or acting in opposition to the main substance) is a key chemical engineering challenge.

A very important part of chemical engineering is in purification and mixing. It is important that products are highly consistent, both for efficacy and safety.

Unlike the oil or heavy chemicals industry, the predominant processes are batch, because of the relatively small amounts being processed and their high value. The failure of a single batch for any reason could be very expensive. Thus control systems are vital.

They generally do not do much distillation, but do a lot of solids processes: crystallization, size control, mixing of solids, granulation. However, solids processes are not taught to a great extent in many chemical engineering degree courses. The manufacture of tablets or capsules is of course a very common process which will be new to most chemical engineering graduates.

It is important to realize that pharmaceutical drugs *by definition* have an effect on the human body in small amounts - they may, for example be designed to increase or decrease the heart rate. Thus they are generally highly toxic - exposure to a small amount may be many times the prescribed dose and can be lethal, or have adverse effects on long-term health. Hence safety is paramount. The processes have to be highly contained and controlled. This is a challenge for maintenance, and requires special technical and management methods.

The speaker has summarized that in all the above mentioned areas of pharmaceutical industries, chemical engineers will have opportunities.

**GUEST LECTURES ORGANIZED FOR THE ACADEMIC YEAR  
2016-2017**

<b>S.no</b>	<b>Date</b>	<b>Resource Person</b>	<b>Organization</b>	<b>Topic Delivered</b>
1	07.10.16	Prof. CA. C. Rama Gopal, Adjunct faculty	Parihar & Sonpar, Vizianagaram	Customer/Banker Relationships - Issues There In
2	25.10.16	Mr. T. Sridhar	ITC Ltd, Visakhapatnam	Trendes in Marketing
3		Mr. Pavan Kumar Nemali	Digiken Upskill, Bengaluru	Social Media Marketing
4		Mr. Sunil Kumar Mahanty, Customer Services Manager	Future Group	Trendes in Retailing
5	26.12.16	Ms. M. Sree Kavya, Jr.HR	Amzur Technologies, Inc., USA	Alumni Interaction with students
6	29.12.16	Dr. Suresh Chander, Regional Director	American Society for Quality, Chennai	Quality, Evaluation of quality, Current situation in industry and possible job opportunities
7	02.01.17	Mr. Raju T. Varma, C.F.O	Sr.Vice President, AAA, California, US	Contemporary issues in Management
8	01.02.17	Ms. Aparna, Mentor	MVGRCE	Entrepreneurs and Startups
9	06.02.17	Mr. CA.C. Rama Gopal, Chartered Accountant	Parihar & Sonpar, Vizianagaram	Post-Budge Analysis 2017
10	11.02.17	Mr. Y. Shankar, Alumni	Deloitte, Hyderabad	Money Laundering - Various Issues
11	25.02.17	Mrs. G. Rekha, Regional Manager	Synopsis, Hyderabad	Student Self investment in development of Employability
12	28.03.17	Mr. J. Venkata Satish	Marketing Manager, Canara Bank, Chennai (Adjunct faculty)	Recent issues in Banking and Insurance sectors
13	29.04.17	Prof. T. Viswanadham	Special Officer, AU PG Centre, Kakinada	Literature and Culture
14	29.04.17	Mr. J. Venkata Satish	Marketing Manager, Canara Bank, Chennai (Adjunct faculty)	Market Segmentation and Appropriate Strategies in Banking Section

## Sample Proofs

2010  
8

# Pavan Kumar. P

Mobile: 8978116518, 9059526393

E-mail: [vayuputra86@gmail.com](mailto:vayuputra86@gmail.com)

## Professional Summary

Having 5.6 years of experience in HR generalist profile.

### Roles & Responsibilities

- Timely completion of Payroll processing
- Generating Position IDs, offer letters and confirmation letters
- Complying statutory regulations
- Taking care of New Team member Orientation
- Co-ordinating with the vendors for statutory submissions
- Successful completion of HR planning
- Preparing, maintaining and reporting on MIS data analytics
- Handling Case management
- Ensuring timely completion of Performance appraisals
- Played a key role in handling statutory audits.
- Preparing and implementing activity calendar.
- Designing the organization policies
- Handled complete recruitment life cycle.

## 1. Working as Implant for Wells Fargo on the rolls of Allsec technologies since Apr'14

### Roles & Responsibilities carrying out at Wells Fargo:

- Ensuring timely completion Payroll processing
- Conducting Team member orientation for all new entrants
- Meeting statutory regulations like PF, Gratuity, income Tax TDS
- Responsible for case management
- Preparing salary structures
- Responsible for Full and Final settlements and TDS calculations
- Facilitating communication on employee engagement activities

## 2. Worked as HR - Executive at Brandix from Sep-10 to April-14.

### Roles & Responsibilities performed in Brandix

- Fully allocation of the tasks to subordinates for operating the payroll and monitoring on time completion & accuracy of the salaries
- Played a key role on developing payroll system in HRMS
- Responsible for maintaining accurate databases & synchronizing the manual reports to Human Resource Information System (HRMS)
- Responsible for Personnel file management



# 2015-16

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Guest lectures arranged to students during the Academic Year 2015-16**

<b>S. No.</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	22-03-2015	Er N JaganmohanaRao	Former CE	North Coastal	
2	22-03-2015	Er S Satyanarayana	Former CE	Medium Irrigation	
3	22-03-2015	Er ISN Raju	Former CE	Cental Design Organization	
4	21-04-2015	Dr MP Rajasekharan	Environmental Advisor	Govt of India	
5	30-04-2015	Dr SrirangamSantosh	Assistant Professor		
6	15-09-2015	A Mohan Fernando	HR	L&T	

**Guest lectures arranged for students during the academic year 2015-16**

<b>S.no.</b>	<b>Date of lecture</b>	<b>Title of the lecture</b>	<b>Name and designation of the resource person</b>	<b>Beneficiary</b>
1	21/05/2016	Soft-wares Used in Power Systems and Their Importance	Sri. B.Kondala Rao, Manager, ABB, Vadodara	III & IV B.Tech. students and Faculty
2	15/03/2016.	Applications of Particle Swarm, Differential Evaluation and Multi Objective Optimization	Dr. Swagatam Das, Assistant Professor, Electronics and Communication Sciences, Indian Statistical Institute, Kolkata	III & IV B.Tech. students and Faculty
3	14/03/2016	PWM methods for Inverters, Microgrid-Role of Power electronics and Control	Dr. Sriram Srinivas, Assistant Professor, IIT, Chennai	III & IV B.Tech. students and Faculty
4	09/01/2016	Applications on Synchrophasor Measurements	Dr. A.K.Pradhaan, Professor, Department of EEE, IIT Kharagpur	III & IV B.Tech. students and Faculty
5	14/10/2015	Lab View Practice on electrical Applications	Dr. V.V. Sastry, Senior Professor, Department of EEE, GVP College of Engineering, Madhurawada, Visakhapatnam	III & IV B.Tech. students and Faculty

	photography, HCCI, PCCI, GDI, OPOC,				
<b>Academic Year 2015-16</b>					
1	Advances in Manufacturing	Dr. P. Radhakrishnan, Director, PSG College of Engineering and Technology, Coimbatore	05-03-16	III B. Tech IV B. Tech	170
2	Mechanical Circulatory Support Systems in Cardiovascular Fluid Mechanics	Dr. Prasad Patnaik BSV, Dept. of Applied Mechanics IIT Madras	27-02-16	III B. Tech IV B. Tech	160
3	BARC Outreach Programme	Sri. N. Satyanarayana, Scientific Officer G, Accelerator and Pulse Power Division, BARC	02-02-16	IV B. Tech	120
4	Emerging Trends in Manufacturing	Prof. P. N. Rao, University of IOWA, Northern California, U.S.A.	20-07-15 to 21-07- 15	III B. Tech IV B. Tech	150

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**AY 2015-16**

## Guest Lectures

AY 2015-16

S.No.	Title	Resource person	Date	Target audience
1	Internet of Things (IoT)	Dr.Thinagaran Perumal Sr.Lecturer University Putra. Malaysia	19.03.16	II Year B.Tech
2	Latest Trends in Biomedical Applications	Sri O. Subrahmanyam Retd. Scientist NSTL, Visakhapatnam	27.02.16	II, III & IV year B.Tech
3	Mentor Graphics for VLSI	Dr. Ch. Gajendranath Chowdary, IIT Hyderabad	11.12.15	IV year B.Tech

### 1. Internet of Things (IoT)



Dr.Thinagaran Perumal, Sr.Lecturer, University Putra. Malaysia had delivered a guest lecture on Internet of Things.

List of students attended

S.No	Regd. No	Name of the Student
1	14331A0401	A VASANTHA MANJARI
2	14331A0402	ADAPA RAMA RAO
3	14331A0403	ADIMULAM MAHESWARI
4	14331A0404	ADIVARAPU RAVINDRA
5	14331A0405	AGRAPU VAMSI KRISHNA YADAV
6	14331A0406	AKETI VENKAT GANESH KUMAR
7	14331A0407	AMITI SRI HARSHA
8	14331A0408	AMUJURU SAI VENKATA KRISHNA VAMSI
9	14331A0409	ANUPOJU SRIKAVYA
10	14331A0410	ATTADA HARISH
11	14331A0411	AYI MANEESH
12	14331A0412	BADIGANTI KARTHIK
13	14331A0413	BADIPATLA NANDINI
14	14331A0414	BADRI VENKATA TARUNI
15	14331A0415	BANAM MANISHA
16	14331A0416	BANDARU SOWMYA
17	14331A0417	BANTUBILLI VENKATA RAO
18	14331A0418	BARATAM SRIJA
19	14331A0419	BATTULA DEVAKEESWAR
20	14331A0420	BEERA JESSY ROSSANNA
21	14331A0421	BELLALA VINEELA
22	14331A0422	BHAMIDI RAMA SUBRAHMANYA BHARADWAJ
23	14331A0423	BOLLA SHARMISTA
24	14331A0424	BOMMULURI DIVYA HARSHINI
25	14331A0425	BONTHA CHANDRA SEKHAR PHANI SHARMA
26	14331A0426	BOTCHA DIVYA
27	14331A0427	BOTTA SAI RAM PAVAN KUMAR YADAV
28	14331A0428	BUDDHARAJU VINEETH VARMA
29	14331A0429	BURLI MOUNICA
30	14331A0430	CHALLA TEJA
31	14331A0431	CHAPPA NAGA VENKATA SAI RAVITEJA
32	14331A0432	CHEEPURUPALLI SANDHYA
33	14331A0433	D SAI GOUTHAM
34	14331A0434	DADI ARAVIND
35	14331A0435	DANDU S S V A RAGHURAM VARMA
36	14331A0436	DANTULURI RACHANA
37	14331A0437	DATTI GAYATHRI
38	14331A0438	DAVULURI VENKATA UPENDRA
39	14331A0439	DOMMISI GOUTAM RAJU
40	14331A0440	ELURI RAMESH BABU
41	14331A0441	EMANDI SINDHUSHA

42	14331A0442	GADI SAI SAMEER
43	14331A0443	GALLA ESWAR PRASAD
44	14331A0444	GANGAVAMSAM MANAS SAI CHARAN
45	14331A0445	GANNAVARAPU KASHYAP
46	14331A0446	GANTI MAHAPATRUNI SOWJANYA
47	14331A0447	GANTI SRI NAGA SAI AJAY KAMAL
48	14331A0448	GANTI SRIVIDYA
49	14331A0449	GANTYADA RAGINI
50	14331A0450	GARIMELLA VENKATA SAI SASHANK
51	14331A0451	GAYATHRI ALLURI
52	14331A0452	GODABA RAMYA
53	14331A0453	GODULA SETUYAMINI
54	14331A0454	GOLLA JERUSHA MANOAH
55	14331A0455	GOLLANGI HEMANTH KUMAR
56	14331A0457	GORAKALA SAGAR
57	14331A0458	GORLE NARAYANA RAO
58	14331A0459	GRANDHI LOVA SRI SWETHA
59	14331A0460	GRANDHI SRAVANI
60	15335A0401	ADARI NAGARJUNA VENKATA RAMANA
61	15335A0402	AMPOLU BHARGAV DEEP
62	15335A0404	BAGGAM RADHA RAMANI
63	15335A0405	BODDEDA RAMYA DEVI
64	15335A0406	BONI MANOJ
65	15335A0407	BONU AKHILASREE
66	15335A0408	CHAKKA RAJESH
67	15335A0409	CHALUMURI RAMYA
68	15335A0410	CHIPPADA YUGANDHAR
69	15335A0411	DADI NARAYANA PRADEEP KUMAR
70	15335A0412	DUDDU SUCHITHA
71	12331A04G4	UPPALAPATI NAGAMBIKA
72	14331A0461	GUDIVADA SAI PRAVALLIKA
73	14331A0462	GUJJU CHAITANYA KUMAR REDDY
74	14331A0463	GULLIPALLI NAGENDRA KUMAR
75	14331A0464	GURU POORNA CHANDRA RAO
76	14331A0465	INAGANTI VENKATA KRISHNA SAMEER
77	14331A0466	INDANA YESWANTH
78	14331A0467	JAMI SUNEETHA
79	14331A0468	JANGA DIVYA
80	14331A0470	KALISSETTY TEJESWAR
81	14331A0471	KAMMILA SUKESH SREE NAGA SAI
82	14331A0472	KAMUJU SATYA DURGA SUPRIYA
83	14331A0473	KANDIPILLI S V C JAHNAVI MRUDULA
84	14331A0474	KANDUKOORI VAMSI KUMAR

85	14331A0475	KAPALA LIPESH
86	14331A0476	KAPUGANTI SURYA TEJA
87	14331A0477	KARRI RAMYA
88	14331A0478	KASA NAGASREE
89	14331A0479	KATHULA GANDHANA
90	14331A0480	KINJARAPU GEETANJALI
91	14331A0481	KINTHALI VINAY KUMAR
92	14331A0482	KOLATI SRIKAR
93	14331A0483	KOLLA THARUN
94	14331A0485	KOLLURU KARTHIK
95	14331A0486	KONDETI SIVA KALI YOGESH
96	14331A0488	KORABU SREE MOURYA SAGAR
97	14331A0489	KORIBILLI CHAITANYA
98	14331A0490	KORLA SRICHANDRAVINEELA
99	14331A0491	KORRAYI SANTHOSH
100	14331A0492	KOTTU LAKSHMI SAI PRASANTH
101	14331A0495	LACHIREDDI AKHILA
102	14331A0496	LAKHINENI SAMEER
103	14331A0497	LALISSETTI ANAND KUMAR
104	14331A0498	MAHANTHI LAVANYA
105	14331A0499	MAJJI AASISH MITHRA
106	14331A04A0	MAJJI HIMA PRASANNA KUMAR RAJA
107	14331A04A1	MAJJI MOHAN BABU
108	14331A04A2	MAKIREDDY RAJULA NAIDU
109	14331A04A4	MANDAPATI VIKASH VARMA
110	14331A04A5	MANDI UDAY BASKHAR
111	14331A04A6	MANGA NIKHILA
112	14331A04A7	MANYAM INDRAJA
113	14331A04A8	MARADA GNANESWARI
114	14331A04B1	MARISARLA IVAN JOEL
115	14331A04B2	MAVURU GEETHASREE
116	14331A04B3	MEDISSETTY HEMANTH KUMAR
117	14331A04B4	MEDURI V L SAI SREE
118	14331A04B6	MISSULA VENKATA PHANEENDRA JAGANNADH
119	14331A04B7	MOHAMMAD RAZAULLAH
120	14331A04B8	MOHAMMAD SHABBIR ALI
121	14331A04B9	MONGAM SURYA
122	14331A04C0	MUNGI SRI KANTH
123	15335A0413	GEDELA ASHOK KUMAR
124	15335A0414	GONDHI SEETHA DEVI
125	15335A0415	GORLE SRAVANI
126	15335A0416	HANUMANTHU NAVEEN

127	15335A0417	KANTA NAVEEN
128	15335A0418	KINTADA ATCHYUTA RAO
129	15335A0419	KOLA SAILATHA
130	15335A0420	KOTHA KASI SURYA SAI MANIKANTA
131	15335A0421	MANCHIPILLI RAMMOHAN
132	15335A0422	MATTALA SATEESH
133	15335A0423	MATTAPALLI KIRANMAYI ANDAL
134	15335A0424	MATURU SAIGUPTA
135	14331A04C1	MUTTA VENKATESH
136	14331A04C2	MYSARLLA LOHITH
137	14331A04C6	NANDAKADORA RAMA KRISHNA
138	14331A04C7	NANDIRAJU VYSHNAVI POOJA
139	14331A04C9	NIMMALA POORNIMA
140	14331A04D0	NISTALA SAI SUSHANTH
141	14331A04D1	PADALA SATISH KUMAR REDDY
142	14331A04D2	PADAM LAKSHMI CHAITANYA KRISHNAM NAIDU
143	14331A04D3	PALLA BHAVANA
144	14331A04D4	PEKALA HARSHA PRIYA
145	14331A04D5	PENTAPATI PRATHYUSHA
146	14331A04D6	PENTAPATI VIJAYA LAKSHMI
147	14331A04D7	PILLA DHIRAJ SRIHARSHA
148	14331A04D8	PODUGU MEENAKSHI
149	14331A04D9	PONNADA GOWRI SANKAR BALAJI
150	14331A04E0	POTHAKAMURI UDAY
151	14331A04E1	PUDU HARSHA VARDHAN
152	14331A04E2	PYDI SUNIL KUMAR
153	14331A04E3	PYLA SAI DILEEP
154	14331A04E4	RAGHUMANDA SOWJANYA
155	14331A04E5	RAVILSETTY RAMANA MAHESH
156	14331A04E6	REDDI KOTESWARA RAO
157	14331A04E7	REDDY SAI DEEPAK
158	14331A04E8	RUNKANA PUSHPAK
159	14331A04E9	SAINATH RAVI BEHARA
160	14331A04F0	SELAGAMSETTY NEELIMA
161	14331A04F1	SHAIK SAMEENA TASNEEM
162	14331A04F2	SHEIK NASREEN SULTHANA
163	14331A04F3	SIDDAVARAPU SONIA
164	14331A04F4	SIDDHAMSETTI DIVYA
165	14331A04F5	SINGIDI SAI BHARATH
166	14331A04F6	SIRUGUDI V DEEKSHITH KUMAR
167	14331A04F7	SIYYADRI DEVANANDA KISHORE
168	14331A04F8	SODUM MANOJ KUMAR REDDY

169	14331A04F9	SOMU ABHIRAM
170	14331A04G0	SONTYANA GANESH
171	14331A04G1	SONTYANA LALITH SAI
172	14331A04G3	SRINIVASA RAO MOTURI
173	14331A04G5	TARIGOPPULA RAHUL
174	14331A04G6	VADDADI SAI SANDEEP
175	14331A04G7	VAJRAGADA PRADEEP KUMUR
176	14331A04G8	VANJANGI VEDASRI
177	14331A04G9	VECHALAPU ADITYANAIDU
178	14331A04H0	VEDALA SRINIVAS CHAKRAVARTHY
179	14331A04H1	VELAGA VENKATA VIVEK
180	14331A04H2	VELLANKI SRIKANTH
181	14331A04H3	VEMULAPUDI BALU KIRANKUMAR
182	14331A04H4	VIKRAM SHANMUKH SATYA PRABHU TEJ
183	14331A04H5	YAJJALA ANNIE SUHASINI
184	14331A04H6	YANDA BHARAT SAI CHARAN
185	14331A04H7	YAVARNA RISHITHA
186	14331A04H8	YELURI KAVYA SRI SIVA SAI
187	14331A04H9	YERRA DEMUDU NAIDU
188	14331A04I0	YERRAMSETTY HARIKA KASTURI
189	15335A0425	PADALA HARIKA
190	15335A0428	RAJAM SOWJANYA
191	15335A0429	RONGALI DEVI SHEKHAR
192	15335A0430	SURLA PRIYANKA
193	15335A0431	TADDI VENKATASATYAKRANTHIKUMAR
194	15335A0432	TAMARALA AKHIL
195	15335A0433	THAMADA VINODH KUMAR
196	15335A0434	UBBISETTI SATISH

## 2. Latest Trends in Biomedical Applications

Sri O. Subrahmanyam, Retd. Scientist, NSTL, Visakhapatnam had delivered a guest lecture on Latest Trends in Biomedical Applications.

### Students List

S.No	Regd. No	Name of the Student
1	12331A0423	BIDDIKI KISHORE GOMANGO
2	12331A0432	CHANDAKA SRINIVASA RAO
3	12331A0433	CHANDALA SANKAR
4	13331A0401	ADDATRAO RAJA SATHEESH
5	13331A0402	AJJARAPU SATYA NAGA JYOTHI
6	13331A0403	AKULA CHANDRA MOULI
7	13331A0404	ALLADA TIRUMALESH
8	13331A0405	ALTHI PRAVALLIKA

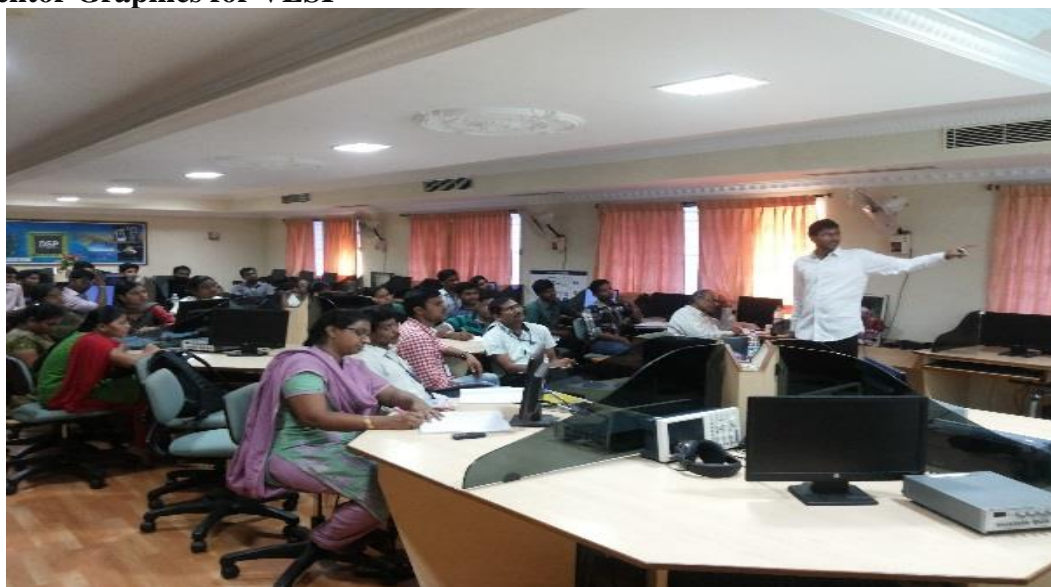
9	13331A0407	APPIKONDA KIRAN BABU
10	13331A0408	ARASADA SANHITA
11	13331A0409	ARASAVILLI SARALA
12	13331A0410	AVUGADDI SRIKHAR
13	13331A0411	AVVARI VENKATA SOWJANYA
14	13331A0412	BALIREDDY BALARAJU SURENDRA DURGA PRASAD
15	13331A0413	BAMMIDI HEMANTHKUMAR
16	13331A0416	BHERI YUVA SRINIVAS RAJA
17	13331A0417	BHOGAVILLI ASHRITHA
18	13331A0418	BODAPATI MERCY DEEPIKA
19	13331A0419	BORA SRINU
20	13331A0420	BUDIDA VENKATA SAI SRI HARSHA
21	13331A0421	BURLE NAVEENA ROSE
22	13331A0422	BURRA SANDEEP
23	13331A0423	CH SHANTA KUMARI
24	13331A0424	CHALUMURI SOWJANYA
25	13331A0426	CHIKKARAJU VENKATA NAGA SAI AKHIL
26	13331A0429	CHITIMIREDDY SOWJANYA
27	13331A0430	DADI YAMINI SURYA DEEPIKA
28	13331A0431	DALAI PAVAN KUMAR
29	13331A0432	DEVABATTULA VENKATA NAGA HARSHITH
30	13331A0435	DUGGIRALA NITHIN
31	13331A0437	FARHAT NASREEN
32	13331A0438	GALLA SRI VIDYA
33	13331A0439	GANARAJU SITA RAMA RAJU
34	13331A0440	GANDI RAMALAKSHMI
35	13331A0441	GANUGULA HARIKA
36	13331A0442	GARBHAPU NIVYAKALYAN
37	13331A0444	GAVARA CHAKRAVARTHI
38	13331A0445	GEDALA RAMA SATYA SURAMMA SANTOSH KUMAR
39	13331A0447	GOLLURI SOWJANYA RANI
40	13331A0448	GOPI VIJAYA LAKSHMI
41	13331A0449	GOPSETTY RAVI TEJA
42	13331A0450	GOVADA CHARAN
43	13331A0452	HEMANTH KUMAR BOTCHA
44	13331A0453	JAGATHA VEERA VENKATA SAI KIRAN
45	13331A0454	JARAJAPU MOWNICA DEVI
46	13331A0456	JEERU PRASANTH KUMAR
47	13331A0457	JOGA CHANDRIKA VANDANA SAI SUDHA
48	13331A0458	K JAYANT
49	13331A0459	KANDAVALA GURU MANIKANTA
50	13331A0460	KALISETTY SUSMITHA
51	13331A0462	KANURI MANOJ
52	13331A0463	KARRI TARAKESWARA RAO
53	13331A0464	KARRI KIREETI

54	13331A0465	KARRI VEERA VENKATA NIHAL
55	13331A0468	KOMMI BINDU VARDANI
56	13331A0469	KONATHALA HIMA SEKHAR
57	13331A0470	KONCHADA DHARMENDRA
58	13331A0471	KONDAPALLI SASHANK
59	13331A0473	KOTHALANKA VENKATA SAIPRASANTH
60	13331A0474	KOYYA GAYATRI
61	13331A0475	KUMBA SATISHBABU
62	13331A0477	KURMANA SHARON MONICA
63	13331A0478	LABALA ASHA CHOWDARY
64	13331A0480	MADEM SAISANDEEPKUMAR
65	13331A0482	MAKARLA SNIGDHA
66	13331A0483	MANDA SINDHU KAUMUDHI
67	13331A0484	MARRA ASWINI NAGA LAXMI
68	13331A0485	MATHTHURTI BHAWANI
69	13331A0486	MAVURI REVANTH KUMAR
70	13331A0487	MIDATHANA GANESH
71	13331A0489	MOHAMMAD ASMA
72	13331A0490	MOHAMMAD ISMAIL
73	13331A0491	MOHAMMED ALI AFSAR
74	13331A0492	MOHAMMED SAMEER
75	13331A0493	MOOGI MEENAKSHI
76	13331A0495	MULAKALAPALLI DILEEP KUMAR
77	13331A0496	MUTHU HARAVINDAN
78	13331A0497	MUTNURU VENKATA KAVYA CHANDRIKA
79	13331A0498	NAKKA MOUNIKA
80	13331A0499	NALLAPU SAI PRAVEEN
81	13331A04A0	NAMBALLA SNEHA
82	13331A04A1	NAMBURI SRI SAI SOWMYA
83	13331A04A2	NANDURI SAI PRUDHVI RAJ
84	13331A04A3	NARALA VIJAYA LAKSHMI
85	13331A04A4	NATHANI NAGARJUNA
86	13331A04A5	NEELAGIRI ASHOKCHANDRA
87	13331A04A6	NISHANT NEKKANTI
88	13331A04B6	PATAKAMSETTI LAKSHMI PRASANNA
89	13331A04B9	PATURU PUJA
90	13331A04C2	PENTA GOWTHAMI
91	13331A04C5	PERLI GOPICHAND
92	13331A04C9	PONNADA CHANDRAMOULI
93	13331A04D3	PUSAPATI ARAVIND VARMA
94	13331A04D5	RACHERLA SWATHI
95	13331A04D8	REJU DURGA PRASAD
96	13331A04E0	RONGALI CHANDRIKA
97	13331A04E3	SAMBHUMAHANATHI KOTEESWARA GOWREE KUMAR
98	13331A04E5	SAPPA TARUNENDRA
99	13331A04E6	SATRAVU VISHNU PRIYA
100	13331A04E8	SAYYAPARAJU SOMA RAJU

101	13331A04F0	SRI SARAN PAMPANA
102	13331A04F1	SUNNAPU PAVANI
103	13331A04F4	SURAKASI DURGAPRASAD
104	13331A04F6	TANDRANKI MANIKANTA
105	13331A04F7	TANGUDU SWATHI
106	13331A04G1	UPADHYAYULA SIRISHA
107	13331A04G3	VADDI LIKHITA
108	13331A04G4	VALLE YAMUNA
109	13331A04G7	VEMPADAPU AKHILKUMAR
110	13331A04G9	VENKATESWARA RAO DABBERU
111	13331A04H2	VILLA SIVA RAMESH
112	13331A04H4	VOONNA VENKATA JAGADEESH GUPTA
113	13331A04H8	YELLETI SUDHIR RAJ
114	14335A0401	AKURATHI DOLAMANI
115	14335A0404	ATTADA VISHNU
116	14335A0405	BARNALA CHINNAMMALU
117	14335A0408	CHAPPA RAVI KUMAR
118	14335A0412	GOPIDALAI SWAPNA
119	14335A0416	KODURU VAMSI
120	14335A0419	KOTANA NARAYANAMURTY
121	14335A0422	MARUPILLI APPA RAO
122	14335A0425	PAKKI SRAVAN KUMAR
123	14335A0428	PRATAPA RAO DILEEP KUMAR
124	14335A0430	SARILLA GOWTHAMI
125	14335A0431	SIRIGIDI MANIKANTHA
126	12331A0406	ALLADA PAVAN
127	12331A0407	ALLU NAGABHUSHANA RAO
128	12331A0410	ANDRA HARSHA NANDAN
129	12331A0412	AVASARALA AKHIL
130	12331A0417	BALUSU HYMA
131	12331A0419	BANDI DIVYANK
132	12331A0420	BARLA DHARANI
133	12331A0424	BIKKELI MANOJ
134	12331A0425	BODALA ASHOK
135	12331A0454	GARIMELLA VARALAKSHMI SWAROOPA
136	12331A0455	GEDELA ANUSHA
137	12331A0456	GEDELA VENKATA SAI SUDHEER
138	12331A0457	GOLLU APPALA NAIDU
139	12331A0463	GRANDI SIVAKUMAR
140	12331A0464	GUBBALA ROHIN KUMAR REDDY
141	12331A0465	GUNDU MANOJ
142	12331A0467	HARIKA REDDY
143	12331A0468	IMANDI PRIYANKA
144	12331A0470	JASWANTH NAIK
145	12331A0471	K ASHA JYOTHI
146	12331A04A1	MATTAPARTHI CHANDRA SEKHAR
147	12331A04A2	MAVURI VINOD KUMAR
148	12331A04A3	METTA VENKATA ASWIN KUMAR

149	12331A04A4	MIRIYALA SAI SURAJ
150	12331A04A5	MOHAMMED KHADAR SHARIEF
151	12331A04A6	MOLLETI VISHNU HIMANISH
152	12331A04A7	MONGAM GOPI KISHORE
153	12331A04A9	MULLA GHOUSEPEER
154	12331A04B0	MUNAKALA SATISH
155	12331A04B1	MUNAVATH CHAITANYA NAIK
156	12331A04B2	MURRI KUSUMA
157	12331A04B3	MUSIDIPALLI PRASANNA KUMAR
158	12331A04B5	MYLAVARAPU REVATHI
159	12331A04C0	NEKKANTI SOWMYA
160	12331A04E0	SAHITHI PASUMARTHI
161	12331A04E1	SAI PAVITHRA PUSAPATI
162	12331A04E3	SAMBANGI REVANTH PREETAM
163	12331A04F2	SRUJANA ALLURU
164	12331A04F4	SURYA KRISHNA KAUSHIK ALLURI
165	12331A04F5	TADI HARIPRASAD
166	12331A04F6	TAINALA MANOJ
167	12331A04G0	THERAPALLI KEERTHI PRIYA
168	12331A04G1	THOMUROTHU PRAVEEN SAI
169	13335A0411	GANGUPALLI DURGA BHAVANI
170	13335A0412	GOTTIMUKKALA APARNA
171	13335A0413	GOTTUMUKKALA KEDHARI
172	13335A0414	GOVADA NAVEEN
173	13335A0418	KANCHARAPU VAMSIVARADHANA RAO
174	13335A0420	KESANAKURTHI RAJKUMAR
175	13335A0421	KOPPU SRAVANI

### 3. Mentor Graphics for VLSI



Dr. Ch. Gajendranath Chowdary, IIT Hyderabad had interacted with faculty and students about Mentor Graphics for VLSI.

List of students attended

S. No.	REGD.NO	NAME OF THE STUDENT
1	12331A0401	AARIF MOHAMED AASHIK
2	12331A0402	ABDUL BAASIT
3	12331A0403	ACHARINI KIRAN KUMAR
4	12331A0404	AFREEN
5	12331A0405	AKKINAPALLI KIRAN KUMAR
6	12331A0406	ALLADA PAVAN
7	12331A0407	ALLU NAGABHUSHANA RAO
8	12331A0408	ALLURI PRUDHVI RAJ
9	12331A0409	AMARENDRA NAYAK
10	12331A0411	ATTADA SAYI KRISHNA
11	12331A0412	AVASARALA AKHIL
12	12331A0413	AYANAKOTA PULLAIAH
13	12331A0414	AYISETTY VENKATESH
14	12331A0415	BAKSHI SHASHANK
15	12331A0416	BALAGA KRISHNA CHAITANYA SAI
16	12331A0417	BALUSU HYMA
17	12331A0418	BANDARU ANIL SAI KUMAR
18	12331A0419	BANDI DIVYANK
19	12331A0420	BARLA DHARANI
20	12331A0421	BATTA CHINNAMMA
21	12331A0422	BETHALA VARUN TEJ
22	12331A0424	BIKKELI MANOJ
23	12331A0425	BODALA ASHOK
24	12331A0426	BODAPATI DEVAKANTH
25	12331A0427	BODDA VENKATA SRINIVAS
26	12331A0428	BOGADHI NAVEEN
27	12331A0429	BONTA SURYA KIRAN
28	12331A0431	CHANDAKA MAHESH
29	12331A0434	CHEBOLU PRAGNYA
30	12331A0435	CHEPURUPALLI HARIKA
31	12331A0436	CHINTAPENTA SIVA SHASHANK
32	12331A0437	CHINTHALA SANDEEP
33	12331A0438	CHODAVARAPU SURYA BHARATH
34	12331A0440	DANTULURI SAMYUKTHA VARMA
35	12331A0441	DARSHINI PRIYANKA GURRALA
36	12331A0442	DASAM RAMALINGESWARA RAO
37	12331A0443	DESARAJU VENKATA GNANA NAVEEN
38	12331A0444	DEVADI VENU GOPAL KRISHNA
39	12331A0445	DEVAGUPTAPU SHIVA SAI KIRAN
40	12331A0446	DILEEP KUMAR SINGAMSETTI
41	12331A0447	DOPPA SIREESHA
42	12331A0448	DUNNA PRATYUSHA
43	12331A0449	DUPPADA RAJESH
44	12331A0450	DWADASI PRASANTH

45	12331A0451	ERANKI VAMSI KRISHNA
46	12331A0452	G KUMAR SWAMY
47	12331A0453	GANUGULA SANTHIPRIYA
48	12331A0455	GEDELA ANUSHA
49	12331A0456	GEDELA VENKATA SAI SUDHEER
50	12331A0457	GOLLU APPALA NAIDU
51	12331A0458	GOOTLA PRUDHVIRAJ
52	12331A0459	GORLE SRAVANI JYOTHI
53	12331A0460	GORU ANIL KUMAR
54	13335A0401	ARIPAKA ANIL KUMAR
55	13335A0402	ASHOK KUMAR BEHARA
56	13335A0403	BANDARU JYOTHI SWAROOP
57	13335A0404	BATTINI SHANMUKHA RAO
58	13335A0405	BODSAKURTHI PADMAJA RANI
59	13335A0406	BOJJA CHANDRA MOULI
60	13335A0407	BYRI DHANA LAKSHMI
61	13335A0408	DANDU BHARGAVI KUMARI
62	13335A0409	DONTALA BANGARU NAIDU
63	13335A0410	EROTHU RAVI
64	13335A0412	GOTTIMUKKALA APARNA
65	12331A0461	GOTIVADA NIKHITA
66	12331A0462	GOTIVADA POORNACHANDRA
67	12331A0463	GRANDI SIVAKUMAR
68	12331A0464	GUBBALA ROHIN KUMAR REDDY
69	12331A0465	GUNDU MANOJ
70	12331A0466	GUTTULA VENKATA SAI SREE
71	12331A0467	HARIKA REDDY
72	12331A0468	IMANDI PRIYANKA
73	12331A0469	ISAMPALLI RAGHU RAJA
74	12331A0470	JASWANTH NAIK
75	12331A0471	K ASHA JYOTHI
76	12331A0473	KADAMATI LAKSHMI RUPIKA
77	12331A0474	KALE VENKATAKRISHNA SAI
78	12331A0475	KAMINENI SAUMITH
79	12331A0478	KARRI DILEEP KUMAR
80	12331A0479	KARTEEK RAMBATLA
81	12331A0480	KAYATHA HYMAVATHI
82	12331A0481	KILLADI SOMASEKHAR
83	12331A0482	KOKKIRIPATI RAM KUMAR
84	12331A0484	KONA SAI KRISHNA SWAMY
85	12331A0485	KORA VENKATA RAMA KRISHNA
86	12331A0486	KORADA JAYARAM
87	12331A0487	KOTAMSETTY RAMA MANOHAR
88	12331A0488	KUPPILI VIJAY BHARGAV
89	12331A0489	KUSUMANCHI SRINU
90	12331A0490	KUTCHERLAPATI KISHORE
91	12331A0492	LOTHA SHYAM PRASAD BABU
92	12331A0493	MADAGALA YATHEESHA

93	12331A0494	MAJJI JAGGUNAIDU
94	12331A0495	MAMIDI HARIKA
95	12331A0496	MAMIDI PRASANTHI
96	12331A0497	MANDALA VENKATA SURYA TEJA
97	12331A0498	MANTHA SUBBA LAKSHMI
98	12331A0499	MARPINA VENKATA SANTOSH KUMAR
99	12331A04A0	MARPINA VENKATA VIJAYA MADHAVI LATHA
100	12331A04A1	MATTAPARTHI CHANDRA SEKHAR
101	12331A04A2	MAVURI VINOD KUMAR
102	12331A04A3	METTA VENKATA ASWIN KUMAR
103	12331A04A4	MIRIYALA SAI SURAJ
104	12331A04A5	MOHAMMED KHADAR SHARIEF
105	12331A04A7	MONGAM GOPI KISHORE
106	12331A04A8	MUDDADA MANIKANTA
107	12331A04A9	MULLA GHOUSEPEER
108	12331A04B0	MUNAKALA SATISH
109	12331A04B1	MUNAVATH CHAITANYA NAIK
110	12331A04B2	MURRI KUSUMA
111	12331A04B3	MUSIDIPALLI PRASANNA KUMAR
112	12331A04B4	MYLAVARAPU GEETHA SATYA SAI LAKSHMI KUMARI
113	12331A04B5	MYLAVARAPU REVATHI
114	12331A04B6	NAGUMALLI AGASTYA
115	12331A04B7	NAMRATHA RAJU DANDU
116	12331A04B8	NARAYANAM ADILAKSHMI
117	12331A04B9	NATHALA SARANYA
118	12331A04C0	NEKKANTI SOWMYA
119	11331A0407	BALAGAM VENKATA NAGA SIVA RAJKUMAR
120	13335A0413	GOTTUMUKKALA KEDHARI
121	13335A0414	GOVADA NAVEEN
122	13335A0415	JAMI PAVAN KUMAR
123	13335A0416	JAMPA JYOTHI
124	13335A0417	JANGAPU SANKARA RAO
125	13335A0418	KANCHARAPU VAMSIVARADHANA RAO
126	13335A0419	KARAKA VALASA SHANMUKHA SAI SRIDHAR
127	13335A0420	KESANAKURTHI RAJKUMAR
128	13335A0421	KOPPU SRAVANI
129	13335A0422	MADEM RAJYA LAKSHMI
130	12331A04C1	NIRUPAMA NETHAKANI
131	12331A04C2	P DHANANJAY
132	12331A04C3	PADAMATI KISHAN
133	12331A04C4	PAILA KISHORE MANIKANTHA
134	12331A04C5	PAILA VENKATA ASWINI
135	12331A04C6	PAKALAPATI PHANINDRA
136	12331A04C7	PALLIKALA ABHISHEK

137	12331A04C8	PANTINI SUNNY SRI HARSHA
138	12331A04C9	PARAMATA MANASA
139	12331A04D0	PATRAYUDU RATNAKAR
140	12331A04D2	PENTAPALLI SRI DIVYA
141	12331A04D3	PILLA SRISHAKA
142	12331A04D4	PITTA BHANU PRAKASH
143	12331A04D5	POLAMARASETTI LOKESH PRUDHVI
144	12331A04D6	POOJITHA KIMUDU
145	12331A04D8	RAJA SEKHAR CHODAVARAPU
146	12331A04D9	REJETI SURESH
147	12331A04E0	SAHITHI PASUMARTHI
148	12331A04E1	SAI PAVITHRA PUSAPATI
149	12331A04E2	SAIDEEP CHEMBULI
150	12331A04E3	SAMBANGI REVANTH PREETAM
151	12331A04E4	SANGAPU BHARAT
152	12331A04E5	SANIVADA VANI PRIYA
153	12331A04E6	SATYALA JOSHUA
154	12331A04E8	SAYED TARIQ YASER
155	12331A04E9	SHARLY NALLI
156	12331A04F2	SRUJANA ALLURU
157	12331A04F3	SUNKARAPALLI SNEHITHA
158	12331A04F4	SURYA KRISHNA KAUSHIK ALLURI
159	12331A04F5	TADI HARIPRASAD
160	12331A04F6	TAINALA MANOJ
161	12331A04F7	TALLAPUDI KALAVATHI
162	12331A04F8	THADANGI RAMALAKSHMI
163	12331A04F9	THATAVARTHY VVSST AYYAPPA SWAMY
164	12331A04G0	THERAPALLI KEERTHI PRIYA
165	12331A04G1	THOMUROTHU PRAVEEN SAI
166	12331A04G2	THOTAKURA PRIYANKA
167	12331A04G3	TURANGI RAVALI
168	12331A04G5	VADAPARTHI S V V SRI HARSHA
169	12331A04G6	VAJJA VENKATESH
170	12331A04G8	VANAPALLI VENKATA SATYA PARVATHI
171	12331A04G9	VANJANGI DHANUNJAI KUMAR
172	12331A04H0	VASADI AVINASH
173	12331A04H1	VEDULA DHEERAJ
174	12331A04H2	VEMALI VAMSI KRISHNA
175	12331A04H4	VISARAPU VAMSI KRISHNA
176	12331A04H5	VOBBILSETTY BHARANI KUMAR
177	12331A04H6	VOONNA DIVYA
178	12331A04H7	VUNDRU SAI SWAROOP
179	12331A04H8	YEGOTI SUNEEL KUMAR
180	12331A04H9	YELLUMAHANATHI LALITHA KRISHNA
181	12331A04I0	YERRAMSETTY SRIHARSHA
182	11331A04B2	TAMMANNAGARI VENKATA CHALAM
183	11H91A0406	KUTCHARLAPATI PRASANTH VARMA
184	126R1A0422	KATHI ESTHER RACHEL

185	13335A0425	NANDANA JAYACHANDARARAO
186	13335A0426	NARISE SURESHKUMAR
187	13335A0427	NARUKULA ANJAN
188	13335A0428	NELLI VENKATESH
189	13335A0429	RAPETI KISHOR KUMAR
190	13335A0430	RONGALI DIVYA
191	13335A0431	SAINI ASHOK
192	13335A0432	SARVASUDDI DEMUDU
193	13335A0434	SIYYADRI BABJI UMAMAHESWARA RAO
194	13335A0435	VIROTHI LOKESH
195	13335A0436	YELLUMAHANTI KIRAN KUMAR PATRO

## Department: CSE

### Criteria: 1.1.1

2015-16

### Guest Lectures arranged

Sno	Date	Title	Venue	Participants	Summary
1	08/11/2015	Introduction to Free Software	Codd Lab,CSE,MVGRCE(A)	33	Mr. Pramod, President, SwechaAP has delivered a guest lecture on 'Importance of Free Software' during Aaron Day to the students of CSE.
2	21/11/2015	Programming Ettiquettes	Codd Lab,CSE,MVGRCE(A)	15	Dr. C. Veerabadhra Rao, Assoc. Prof., CSE has delivered a guest lecture on best programming pracitises to the students of CSE during CODE KING 2015.
3	27/02/2016	IoT, the future technology	Admin Seminar Hall, MVGRCE(A)	208	Mr. Sripath Roy, Gen. Secretary, Swecha AP has delivered a guest lecture on IT Technologies to the students durin Freedom Fest 2016.
4	28/02/2016	Testing using Selenium	Admin Seminar Hall, MVGRCE(A)	208	Mr. Nalinikanth, Quality Analyst, THoughtWorksINC, has dlivered a lecture on 'software testing automation using selenium' during Freedom Fest 2016.
5	29/02/2016	Working of Internet	Admin Seminar Hall, MVGRCE(A)	208	Dr. B. Srinivas, Assoc. Prof., CSE has delivered a guest lecture on the working of the internet during Freedom Fest 2015.

**Academic Year (2015-16)**

<b>S. No</b>	<b>Date</b>	<b>Name of the Expert</b>	<b>Designation</b>	<b>Name of the Organization</b>	<b>Topic of the lecture</b>
1	25/03/2016	Sri D.Rama Raju,	Deputy Manager, Water Systems/D&E Dept,	Visakhapatnam Steel Plant	Treatment of Coke Oven Effluent
2	11/04/2016	Sri B.Dakshina Murthy	General Manager, HR	LG Polymers India Pvt Ltd., RR Venkatapuram, Visakhapatnam	How to face Interviews?

**Academic Year (2015-16) S.No 1:**

**Title of the Guest Lecture:** Treatment of Coke Oven Effluent

**Description of the Guest Lecture:**

Industrial progress has been accompanied by a growing negative impact on the environment in terms of its pollution and degradation. In our country number of coke oven batteries for production of low ash metallurgical coke is increasing day by day. During off gas cleaning there are different sources of generation of waste water. But the waste water is not treated before discharge. Naturally found coal is converted into coke in coke ovens and a large quantity of water is used for quenching hot coke and for washing gas. Effluent generated contains high value of TSS, BOD, COD, phenols, ammonia, cyanide, which cause serious water pollution problems. This study was carried out to focus on characteristics of the effluent produced by coke oven plant and a treatability study was conducted to find out an appropriate treatment procedure to achieve a depletion of pollutants for discharge to surface water bodies after meeting the level of standard. This study was done initially separating ammonia of raw effluent through natural zeolite for ammonia scrubbing water. After this treatment the treated water was mixed with coal tar separator effluent, quenching effluent and gas plant effluent for chemical treatment followed by two stages aerobic biodegradation process and finally adsorption process by activated carbon. Overall depletion rate of COD, BOD, phenol, cyanide, in the waste water achieved by this treatment process were 94.9%, 96.2%, 98.3%, 94.52%, respectively and discharge effluent met the Pollution Control Board standard. On the basis of the findings schematic treatment system was finalized.

## Academic Year (2015-16) S.No 2:

### Title of the Guest Lecture: How to face Interviews?

#### Description of the Guest Lecture:

The following tips were given by the speaker to face interviews

##### 1. Use your face to face communication skills

The face to face interview is when the employer will decide if they think you're right for the job, and the right fit within their company. But it's also a chance for you to decide if you think you would want to work for their company.

##### 2. Do your research

This one sounds obvious; but it's surprising how many people neglect to do this when they are preparing for a face to face interview. Make sure you've read through the company's website and have a few snippets of information about it ready to drop into the conversation – this might be case studies that you really liked, or a particular **blog** that resonated with you.

##### 3. Use real-world examples in your answers to interview questions

These questions are your chance to shine and prove that you are suitable for the job, based on experience and skills you have gained in previous graduate jobs or through your education. Make sure you prepare some examples for these sorts of interview questions and have some experiences to hand that you can talk about.

##### 4. Ask the employer questions

At the end of a graduate job interview, an employer will always ask "**Do you have any questions for me?**" Your answer should always be 'yes' and you should always ask at least three questions.

##### 5. Wear a smart interview outfit

Unless an interviewer tells you that it's okay to dress casually for an interview, you should always make sure that you're dressed smartly. This is the first time that an interviewer will see you, and you want to make the right impression.

##### 6. Be yourself in a face to face interview

My final top tip for interviews; you've made it this far because the company likes you and your experience, so it's really important to be yourself.

**GUEST LECTURES ORGANIZED FOR THE ACADEMIC YEAR  
2015-2016**

<b>S.no</b>	<b>Date</b>	<b>Resource Person</b>	<b>Organization</b>	<b>Topic Delivered</b>
1	26.08.2015	Mr. Y. Srikanth, HR Manager	Dr. Reddy's	HR Challenges in Pharma Industry
2	08.09.2015	Ms. S. Aruna, Executive	Vedanta Foundation, Visakhapatnam	Self Management - Key Success
3	03.11.2015	Mr. N. Srinivasa Rao, Dy. Commissioner	Commercial Taxes	Change in Sales tax region in India
4	03.11.2015	Mr. S. Ramakrishna, CA	Visakhapatnam	GST and the Current system
5	23.11.2015	Prof. N. Viswnadham	IISC, Bengaluru	Innovation for India by India in India with focus on entrepreneurship
6	02.12.2015	Mr. P.R.V Sivaramakrishna	Institute of Company Secretaries of India, Visakhapatnam	Company Secretary modules examinations and opportunities
7	31.12.2015	Prof. Venkat Ikkurthy	USA	Importance of Business Analytics and Intelligence to increase managerial effectiveness in corporate world
8	31.12.2015	Mr. C.S. Rao	Ambitions Career Counsellors, Visakhapatnam	SAS Certification and Opportunities
9	03.02.2016	Ms. S. Aruna, Executive	Vedanta Cultural Foundation, Visakhapatnam	Work Ethics on Effective Management
10	11.02.2016	Dr. Jayadev. M	IIM-Bengaluru	Contemporary issues in Banking and Finance
11	18.02.2016	Prof. A. Raghava Rao, Correspondent	MANSAS	Management Mantras
12	03.03.2016	Dr. Rajiv K Tayal	Indo-US Science and Technology Forum, New Delhi	Technology Acquisition-Options and Implications
13	09.03.2016	Mr. Rajesh Ayanala	Future Group	Retail Management
14	09.03.2016	Mr. Sunil Kumar Mahanty	Future Group	Retail Management
15	11.03.16	Mr. CA.C. Rama Gopal, Chartered Accountant	Parihar & Sonpar, Vizianagaram	Taxes and Incentives in Budget 2016 - Impact Analysis
16		Prof. B. Rama Krishna Rao, Rtd. Professor	Andhra University	Economic Survey & Budget Analysis (Primary Sector)
17	12.03.16	Mr. A. Krishna Balaji, President	VASSIWA	Industry experts interaction with the students
18		Mr. N. Seshagiri Rao, MD	Visakha Electrodes Pvt. Ltd	Industry experts interaction with the students
19	01.04.16	Mr. Edwin D.T, Executive	EBSCO Information Services India Pvt. Ltd	Discover platform features and functionality of EBSCO online learning facility

## Sample Proofs



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(APPROVED BY AICTE, NEW DELHI AND PERMANENTLY AFFILIATED TO JNTU, KAKINADA)

08.03.2016

2015-16  
13

**CIRCULAR**

All the students and faculty of MBA department are hereby informed that the department is organizing a guest lecture on 09.03.2016. @ 11 AM.

Guest Speakers : 1. Mr. Rajesh A  
2. Mr. Sunil Kumar Mahanty  
Vizag Central (Future Group) Team  
Topic : Retail Management  
Venue : MBA Seminar Hall

  
Head of the Department

3 see - @h  
Group  
M



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2015-16  
10

10.02.2016


CIRCULAR

All the students and faculty of MBA department are hereby informed that the department is arranging a guest lecture on 11.02.2016 (Thursday). All are required to attend for the same. All the students shall come in dress code with blazer.

Speaker : Dr. Jayadev M  
Indian Institute of Management, Bangalore (IIM – B)  
Topic : Contemporary issues in Banking and Finance.  
Venue : MBA Seminar Hall  
Date/Time : 11.02.2016 @ 1.30 PM

  
Head of the Department

Dr. GVSSN -

Dr. SSNRI - 


Mr. ALN - 


Mr. ESK - 

Mr. DS - 

Dr. EVPAS - 

Mr. MVV - 

Mr. TSP - 

Mrs. PML - 

Dr. KR - 

Mr. RB - 

Mr. VSM - 

Mr. TNR - 



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Date: 02.02.16

2015-16  
9

CIRCULAR

All the students and faculty members are hereby informed that the department is organising a guest lecture tomorrow as detailed below.

Topic : Work Ethics for Effective Management  
Speaker : Ms. Aruna  
Vedanta Foundation – Visakhapatnam  
Date : 03.02.2016 @ 9:30 AM  
Venue : MBA Seminar Hall

All the students of I year shall attend the lecture with blazer. Absentees will be seriously viewed.

  
Head of the Department

All faculty may pl. note:

MB  
MBA II sem 'A'









# DEPARTMENT OF MANAGEMENT STUDIES



MVGR COLLEGE OF ENGINEERING (AUTONOMOUS) - VIZIANAGARAM, AP



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Admn. Office: 08922-241732, 241199 (PBX)  
Dept. Office: 08922-241742(O), 241743 (HOD)  
FAX: 08922-241014

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2015-16  
f







31.12.2015

## CIRCULAR

All the faculty members and students are hereby informed to attend and participate in 'Expert Lecture' arranged by Department of Management Studies today as cited below.

Title: "Importance of Business Analytics and Intelligence to increase Managerial Effectiveness in Corporate world"  
Speaker: Prof. Venkat Ikkurthy, USA  
Date & Venue: 31.12.15, MVGR Admin Seminar Hall at 1.30 PM.

  
Head of the Department

ALN   
RAGU  → I ~~cannot~~ see him as a 'prof'. He is the promoter of Conto. Can you send me his bio  
DS   
NOT   
RB   
TNR 

2015-11-11  
Lecture by Prof N Viswanadham, IISc on Nov 23

1 message

Prasada Raju &lt;drpraju@nic.in&gt;

Wed, Nov 11, 2015 at 8:23 PM

To: R Ramesh Mech MVGRCE Vzm <dr.r.ramesh@mvgrce.edu.in>  
Cc: "Dr. K.V.Lakshmipathi Raju" <kvl\_raj@ yahoo.co.in>, raju kvl <principal.mvgr@gmail.com>, Gopal Raju HoD-CIVIL MVGR CE VZM <hodcivil.mvgr@gmail.com>, Nagesh V IT MVGRCE Vzm <hod.it.mvgr@gmail.com>, HoD English MVGRCE Vzm <hod.english.mvgr@gmail.com>, HoD Maths MVGRCE Vzm <hod.maths.mvgr@gmail.com>, Parthasarathi TNV Chemistry MVGRCE Vzm <hodchemistry.mvgr@gmail.com>, Srinivasa Reddy G Phy MVGRCE Vzm <hod.physics.mvgr@gmail.com>, mvgr\_tpcell <mvgr\_tpcell@yahoo.com>, MVGR Dr R Ramesh <ramesh.mvgr.dst@gmail.com>, Rama Raju KSS MBA MVGRCE Vzm <mbahod.mvgr@gmail.com>, "vpac.mvgr" <vpac.mvgr@gmail.com>, Ramachandra Raju DJJ VP-Admn MVGRCE Vzm <vpad.mvgr@gmail.com>, "Purnachander Rao, AP MVGR Coll of Engg VZM" <apac.mvgr@gmail.com>, Ranga Raju P AP-Admn MVGRCE Vzm <mech.mvgr@gmail.com>, Adinarayana S Mech MVGRCE Vzm <mechhod.mvgr@gmail.com>, Adinarayana MVGR Coll of Engg-HoD Mech <mechhod@mvgrce.edu.in>, Subba Rao Ch Chem MVGRCE Vzm <chemhod.mvgr@gmail.com>, Ramana Reddy R ECE MVGRCE Vzm <eeehod.mvgr@gmail.com>, Mohanti EEE MVGRCE Vzm <eeehod.mvgr@gmail.com>, Sitarama PS <psitaramaraju@rediffmail.com>, vicky.poosapati@gmail.com

Dear Prof Ramesh garu

As discussed, please be informed that Prof N Viswanadham garu, IISc, Bengaluru, who is visiting Vizag, will address our dear faculty and students on Nov 23 (Monday). As discussed the other day and kindly suggested by our esteemed Principal, the lecture may be mainly beneficial to the students of MBA, M Tech and faculty from all Departments. The following schedule is chalked out for this purpose:

Nov 23 (Monday)

09:15 hrs pick up from KSR Complex, Seethammadhara (Opp Rythu Bazar-Eenadu), Vizag

10:10 hrs Arrival MVGR College of Engg, Chintalavalasa, Vizianagaram

10:15 hrs plant a sapling and brief visit around the college (in buggy/car)

10:40 hrs Tea with Principal and few senior faculty members

11:00 hrs Lecture on **Innovation for India by India in India with focus on entrepreneurship**

12:30 hrs Lunch

13:15 hrs Leave for Vizag

I will be delighted to pickup Prof Viswanadham garu on Nov 23 and bring him to our College.

Kindly find attached his Brief CV (one-page), detailed CV and Photo for needful please. I will forward Abstract of the talk when received please.

With kind regards and many thanks--Prasada Raju/Nov 12(09:45)

Dr DR Prasada Raju, FNAE, FAPAS

Professor of Mech Engg&Dean: MVGR College of Engg(A)-Vizianagaram

R&D Adviser: IIT-Madras, VIT Univ-Vellore&Jawaharlal Nehru Tech Univ-Kakinada

Visiting Professor: PSG Group of Insts-Coimbatore, GMR Inst of Tech(A)-Rajam,

Srinivasa Inst of Engg&Tech-Amalapuram and Andhra Univ-Visakhapatnam

Home: B-17, Dayalnagar, Visalakshi Nagar, Visakhapatnam-530043

Mobile: +91 709 3537671, Email: prasadarajudr@yahoo.com



KSS RAMA Raju &lt;mbahod.mvgr@gmail.com&gt;

**My Profile - Yagna Srikanth**

1 message

Yagna Srikanth &lt;srikanthy@drreddys.com&gt;

Mon, Aug 24, 2015 at 11:54 PM

To: KSS RAMA Raju &lt;mbahod.mvgr@gmail.com&gt;

Dear Mr. Rama Raju,

Attaching my profile for your reference.

Kindly share with me the topic that has been announced in the institute so that I shall plan that in accordance with my other topics of discussion.

Thanks.

Regards,

Yagna Srikanth

HR Manager

CTO-6

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by  
- Profile File - Govt Lecture

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Yagna Srikanth\_Resume.pdf

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# POs, PSOs and COs of all Programs

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

# Dept. of Civil Engineering

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B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

## B.Tech. (Civil Engineering)

### Semester-I Courses

#### Course-1

Course Code:	AIMAT001
Course Title:	ENGINEERING MATHEMATICS-I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	problems.
CO-2	Transforms
CO-3	Apply the concepts of Maxima and Minima for finding extreme values
CO-4	Formulate and solve P.D.E

#### Course-2

Course Code:	A1PYT001
Course Title:	ENGINEERING PHYSICS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	State light waves application in optic fiber.
CO-2	List different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction.
CO-3	thermodynamic processes and entropy.
CO-4	Explain the system of forces(non-equilibrium)and different types frictions.

#### Course-3

Course Code:	A1CIT001
Course Title:	COMPUTER PROGRAMMING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Explain the features of C and write a formal algorithmic solution for the given problem
CO-2	State the significance of primary constructs & methodology of procedural language C
CO-3	Suggest the alternative construct choices in procedural language C.
CO-4	Recall systematic approach of automated solution design, implementation and testing using a procedural language.

#### Course-4

Course Code:	AIMED001
Course Title:	ENGINEERING DRAWING
Theory / Lab:	Theory / Lab:
L-T-P-C:	1-0-3-3
Course Outcomes:	
CO-1	Draw regular polygons, conic curves to the scale
CO-2	Draw orthographic projections of points, lines.
CO-3	Draw orthographic projections of planes and solids
CO-4	Draw isometric projection from orthographic projections and vice-versa

#### Course-5

Course Code:	A1CHT001
Course Title:	ENVIRONMENTAL STUDIES
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify the need of conservation of the natural resources, ecosystem and its diversity
CO-2	Know the environmental challenges induces due to unplanned anthropogenic activities

CO-3	Identify the environmental impact of developmental activities
CO-4	Explain the environmental legislations of India and the first global initiatives towards sustainable development.

#### Course-6

Course Code:	A1EHL001
Course Title:	ENGLISH LANGUAGE PRACTICE -I
Theory / Lab:	Lab
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy.
CO-2	Student shall be able to use right structure for right context and meaning.
CO-3	Student shall be able to read and comprehend the content in English well.
CO-4	English well for his/her professional requirement.

#### Course-7

Course Code:	A1PYL001
Course Title:	ENGINEERING PHYSICS LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	and to determine the numerical aperture and bending loss of the optic fiber.
CO-2	fields due to currents using tangent law.
CO-3	Student will be able to determine the specific heat and coefficient of thermal conductivity for the given materials.
CO-4	Student will be able to determine the coefficient of friction.

#### Course-8

Course Code:	A1CIL001
Course Title:	COMPUTER PROGRAMMING LABORATORY
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	and expression evaluation for any given problem.
CO-2	Write functions and utilize single & multi-dimensional arrays in C language
CO-3	Create user defined data types implement them for solutions in C language.
CO-4	Appreciate the library support available in standard C for dealing with external files both for read and write purposes.

## Semester-II Courses

#### Course-1

Course Code:	AIMAT002
Course Title:	MATHEMATICAL METHODS
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	which frequently occur in engineering problems
CO-2	forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation.
CO-4	Student will be able to solve Initial value problems through numerical methods.

#### Course-2

Course Code:	A1CYT001
Course Title:	ENGINEERING CHEMISTRY
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse
CO-2	Potentiometry to understand the principle and applications of electrochemistry. Topics on electrochemical cells, batteries and
CO-3	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection.
CO-4	polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and

**Course-3**

Course Code:	A1EET001
Course Title:	BASIC ELECTRICAL & ELECTRONICS ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Able to analyze various types of electrical circuits
CO-2	Ability to identify suitable machine for a particular application
CO-3	Have the ability to explain the working principle of different types of semiconductor devices.
CO-4	Have the ability to explain the concepts of Communication Systems.

**Course-4**

Course Code:	A1CET002
Course Title:	APPLIED MECHANICS
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Solve the problems on plane systems using equilibrium equations
CO-2	Calculate centroid and moment of inertia in engineering applications
CO-3	Analyze plane and space trusses
CO-4	Apply the concepts of kinematics and kinetics in engineering problems

**Course-5**

Course Code:	A1EHL002
Course Title:	ENGLISH LANGUAGE PRACTICE -II
Theory / Lab:	Lab
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly with confidence and efficiency.
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly.
CO-3	Student shall be able to participate well in debates and discussions.
CO-4	Student shall be able to write both Technical and General reports well.

**Course-6**

Course Code:	A1CYL001
Course Title:	ENGINEERING CHEMISTRY LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	solution.
CO-2	determination.
CO-3	Students will understand in construction of galvanic cell, determination of calorific value, and preparation of biodiesel.

**Course-7**

Course Code:	A1MEW001
Course Title:	BASIC ENGINEERING WORKSHOP
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Ability to perform simple cutting, grinding, drilling, riveting, plumbing and tinsmith jobs.
CO-2	Identify various components of a building and give lump-sum estimate
CO-3	Install suitable Operating System based on hardware and perform internet connectivity
CO-4	Create circuits with suitable electrical parts based on load calculations and give lump-sum estimate.
CO-5	electronic measuring equipment

**Semester-III Courses****Course-1**

Course Code:	AICET201
Course Title:	STRENGTH OF MATERIALS –I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Compute the stresses due to axial, shear and bending moment
CO-2	Determine and draw Shear force and bending moment diagrams for beams
CO-3	Calculate the deflections and slope in statically determinate beams
CO-4	Compute the stresses developed in thin cylinders

#### Course-2

Course Code:	AICET202
Course Title:	ELEMENTS OF SURVEYING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Recognize various surveying instruments used for measurement of distances, directions and elevations
CO-2	Calculate distances, areas and volumes using various surveying methods and instruments.
CO-3	Identify and sketch suitable curve for the given data.
CO-4	Know the working principles of Total Station and GPS and list their application.

#### Course-3

Course Code:	AICET203
Course Title:	FLUID MECHANICS
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	To know the fluid properties and measurement of pressure and discharge.
CO-2	To compute the hydrostatic forces on plane and curved surfaces.
CO-3	To apply the fundamental principles of fluid mechanics to various flow problems.
CO-4	To solve the problems on pipe networks and boundary layer.

#### Course-4

Course Code:	AICET204
Course Title:	BUILDING MATERIALS AND CONCRETE TECHNOLOGY
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Know various engineering properties of building construction materials and suggest their suitability.
CO-2	Identify the functional role of ingredients of concrete and apply this knowledge to concrete mix design.
CO-3	Acquire and apply fundamental knowledge in the fresh and hardened properties of concrete.
CO-4	Design mix proportions for different grades of concrete as per Indian Standards

#### Course-5

Course Code:	AIMST001
Course Title:	MANAGERIAL ECONOMICS AND FINANCIAL ANALYSIS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to understand application of economics in decision making.
CO-2	Able to develop and determine cost efficient production through optimization.
CO-3	Able to aware various business environmental factors and the impact
CO-4	Able to do financial analysis of the firm to know its performance from different parameters.

#### Course-6

Course Code:	AIMAT109
Course Title:	PROBABILITY AND STATISTICS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3

<b>Course Outcomes:</b>	
CO-1	and computers.
CO-2	and reducing sampling errors.
CO-3	Students will able to get Prediction and control the numerical and time series data occurs in industry and scheduling.
CO-4	production lines.

#### Course-7

Course Code:	A1CEL201
Course Title:	SURVEYING LABORATORY
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Ability to determine heights, distances and irregular areas using conventional survey instruments.
CO-2	Ability to determine heights, distances and irregular areas using Total Station and GPS
CO-3	To prepare plans and contour maps of the given area.

#### Course-8

Course Code:	A1CEL202
Course Title:	FLUID MECHANICS LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Able to appreciate the Bernoulli's Theorem by experimental verification
CO-2	Determine losses in pipes by conducting experiments.
CO-3	Estimate coefficient of discharge of flow measuring devices by performing experiments
CO-4	To identify the type of flow in a pipe by conducting Reynold's experiment

### Semester-IV Courses

#### Course-1

Course Code:	A1CET205
Course Title:	STRENGTH OF MATERIALS –II
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
<b>Course Outcomes:</b>	
CO-1	Determine the principal stresses and strains.
CO-2	Analyse and design shafts and springs subjected to pure torsion and combination of torsion, bending and axial loads.
CO-3	Compute the resultant stresses due to combined axial and bending.
CO-4	Calculate stresses in beams subjected to unsymmetrical bending

#### Course-2

Course Code:	A1CET206
Course Title:	HYDRAULICS & HYDRAULIC MACHINERY
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
<b>Course Outcomes:</b>	
CO-1	Solve uniform and non-uniform flow problems
CO-2	Apply dimensional analysis and similitude for various applications.
CO-3	Differentiate various types of dams based on its functions.
CO-4	Design turbines and pumps to meet the field requirements

#### Course-3

Course Code:	A1CET207
Course Title:	STRUCTURAL ANALYSIS
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
<b>Course Outcomes:</b>	
CO-1	Calculate bending moment and shear forces in fixed and propped cantilever beams.
CO-2	Apply slope deflection and moment distribution methods for analysis of continuous beams

CO-3	Identify the position of moving loads and compute their effect using the concepts of influence lines for beams.
CO-4	Analyze plane trusses using stiffness method.

#### Course-4

Course Code:	A1CED208
Course Title:	BUILDING PLANNING & CIVIL ENGINEERING DRAWING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	State building Bye-laws, Principles and General Building Requirements as per NBC
CO-2	Describe different conventional signs in drawing plans of structures
CO-3	Plan and drawn Residential buildings and Industrial structures
CO-4	Interpret drawings of RC buildings, Industrial structures and Pipe line drawings

#### Course-5

Course Code:	A1CET303
Course Title:	ENGINEERING GEOLOGY
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know the importance of Engineering Geology from Civil Engineering point of view.
CO-2	Identify different rocks and minerals.
CO-3	Apply geophysical methods for groundwater exploration.
CO-4	Select the site for dams, reservoirs and tunnels.

#### Course-6

Course Code:	A1CEL203
Course Title:	STRENGTH OF MATERIALS LABORATORY
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Determine various mechanical properties of steel.
CO-2	Determine the hardness of the given specimen using BHN.
CO-3	Determine the stiffness and rigidity modulus of the given spring material
CO-4	Determine the impact strength of given steel specimen.
CO-5	brittle materials using CTM

#### Course-7

Course Code:	A1CEL204
Course Title:	HYDRAULIC MACHINERY LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Able to calculate Impact of Jet on vanes and appreciate its use in turbines and pumps.
CO-2	Determine the Efficiency and Performance Curves for Kaplan, Francis and Pelton turbines.
CO-3	Determine the Efficiency and Performance Curves of Reciprocating and Centrifugal pumps.
CO-4	Determine the flow characteristics of hydraulic jump, broad crested weir.

### Semester-V Courses

#### Course-1

Course Code:	A1CET209
Course Title:	WATER RESOURCES ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Determine various hydrological parameters
CO-2	Apply various methods for estimating and routing of flood runoff.
CO-3	Solve well hydraulics problems

CO-4	Determine crop water requirements.
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#### Course-2

Course Code:	A1CET210
Course Title:	DESIGN REINFORCED CONCRETE STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Apply the design philosophies of working stress method and limit state method for determining design parameters of RC beams
CO-2	Design and detail the reinforced concrete beams using IS code
CO-3	Design and detail the reinforced slabs, columns and footings using IS Code.
CO-4	Determine the anchorage and development length of RC element.

#### Course-3

Course Code:	A1CET211
Course Title:	TRANSPORTATION ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Recall history of road development in India.
CO-2	Design road geometric elements based on highway surveys.
CO-3	Design elements of flexible and rigid pavements based on highway material properties
CO-4	Conduct traffic surveys and use the data in solving traffic engineering problems

#### Course-4

Course Code:	A1CET212
Course Title:	GEOTECHNICAL ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Categorize soils based on their physical properties
CO-2	Calculate seepage discharge using a flow net
CO-3	Determine the stresses in soils, settlement and rate of settlement consequent to construction activity
CO-4	Estimate the shear strength using the cohesion and internal friction of soils under different drainage conditions.

#### Course-5

Course Code:	A1CET213
Course Title:	ENVIRONMENTAL ENGINEERING-I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Estimate quantity of water requirement for a town/city.
CO-2	Identify the water source and select proper intake structure.
CO-3	Design the components of treatment plants
CO-4	Plan and design the water distribution networks.

#### Course-6

Course Code:	A1CEL205
Course Title:	Concrete Technology Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Test and determine various properties of concrete making materials
CO-2	Test and Determine fresh and hardened properties of concrete
CO-3	Work with NDT equipment

#### Course-7

Course Code:	A1CEL206
Course Title:	ENGINEERING GEOLOGY LAB

Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Identify Mega-scopic minerals & their physical properties.
CO-2	Identify Mega-scopic rocks & their physical properties.
CO-3	To prepare the maps showing contour, slope and other topographical features.
CO-4	To Solve structural geology problems

## Semester-VI Courses

### Course-1

Course Code:	A1CET214
Course Title:	DESIGN OF STEEL STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3-0-1-4
Course Outcomes:	
CO-1	Design the connections of steel components as per Indian standards.
CO-2	Perform plastic analysis of Steel Structures
CO-3	Design and detailing rolled steels sections for axial and flexural members.
CO-4	Design and detailing of built up sections for axial and flexural members.

### Course-2

Course Code:	A1CET215
Course Title:	ADVANCED REINFORCED CONCRETE STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Design and detail RCC two way slabs and staircases.
CO-2	Design and detail RCC strip and combined footing.
CO-3	State the basics of Pre-stressing, analyze and design simply supported pre-stressed concrete beams.
CO-4	Estimate various losses in Pre-stressed concrete beams.

### Course-3

Course Code:	A1CET216
Course Title:	FOUNDATION ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Compute earth pressure and the stability of slopes in cutting as well as embankments using different theories.
CO-2	Suggest a suitable type of foundation based on soil strength assessed using field tests such as plate load test and/or SPT.
CO-3	Decide the size of foundation based on bearing capacity/ bearing pressure.
CO-4	Identify expansive soils based on soil properties.

### Course-4

Course Code:	A1CET217
Course Title:	ENVIRONMENTAL ENGINEERING-II
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Plan and design the sewerage systems
CO-2	Analyze the characteristics of the waste water
CO-3	Select suitable method for sewage treatment
CO-4	Identify suitable method of disposal of sewage

### Course-5

Course Code:	A1CET306
Course Title:	CONSTRUCTION EQUIPMENT AND METHODS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3

<b>Course Outcomes:</b>	
CO-1	Select proper construction equipment for the given purpose
CO-2	Describe various construction equipment based on applications, utilization, productivity
CO-3	Identify suitable equipment for concreting and aggregate crushing
CO-4	Know the activities related to safety and quality measures during various modern construction activities

#### Course-6

Course Code:	A1EET403
Course Title:	MATLAB
Theory / Lab:	Theory
L-T-P-C:	2-0-2-3
<b>Course Outcomes:</b>	
CO-1	Work in MATLAB environment.
CO-2	Know the basic functions and utilities in MATLAB.
CO-3	Write MATLAB programs for simple engineering problems and functions.
CO-4	Solve algebraic equations using MATLAB.

#### Course-7

Course Code:	A1CEL207
Course Title:	TRANSPORTATION ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Ability to test various properties of aggregates and determine their suitability for pavement construction.
CO-2	climatic conditions.
CO-3	Design a bituminous mix using Marshal Method.
CO-4	Plan and conduct different types of traffic studies and propose traffic engineering schemes.

#### Course-8

Course Code:	A1CEL208
Course Title:	GEOTECHNICAL ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Conduct tests on soils and classify them based on index properties
CO-2	Conduct tests on compaction of fine and coarse grained soils and their in-situ density
CO-3	Conduct tests to determine engineering properties of the soils

### Semester-VII Courses

#### Course-1

Course Code:	A1CET218
Course Title:	ESTIMATION AND CONTRACTS
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
<b>Course Outcomes:</b>	
CO-1	Calculate Earthwork quantities for roads and canals.
CO-2	Prepare bar bending schedule.
CO-3	Prepare specifications and contract documents for a project
CO-4	Prepare a detailed estimate of a building using long wall – short wall method and centerline method.

#### Course-2

Course Code:	A1CET308
Course Title:	ADVANCED WATER RESOURCES ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Design canals and canal structures.
CO-2	Identify various components of diversion head works.

CO-3	Know various investigations required for reservoir planning.
CO-4	Analyze and design dams and spill ways.

### Course-3

Course Code:	A1CET307
Course Title:	RAILWAY AIRPORTS AND HARBORS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Plan, design and maintain a railway track and its elements.
CO-2	Know railway signals, signaling systems and control of train movement
CO-3	List aspects of planning and maintenance of various airport elements.
CO-4	List aspects of planning and maintenance of various harbor elements.

### Course-4

Course Code:	A1CET311
Course Title:	PAVEMENT ANALYSIS, DESIGN AND EVALUATION
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know different factors influencing pavement design.
CO-2	Calculate stresses developed in flexible and rigid pavements.
CO-3	Know the maintenance requirements of flexible and rigid pavements.
CO-4	Compare different pavement management systems.

### Course-5

Course Code:	A1CET305
Course Title:	BUILDING CONSTRUCTION AND SERVICES
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know the terminology related to masonry and wall finishing.
CO-2	Describe different types of roofing systems, flooring services and other different building components
CO-3	Identify suitable services required for effective building utilization.
CO-4	Know the concepts of green buildings

### Course-6

Course Code:	A1CET313
Course Title:	GROUND IMPROVEMENT TECHNIQUES
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Choose method of soil densification based on its suitability.
CO-2	List principles of various dewatering techniques for different types of soils.
CO-3	Recognize different geosynthetics for various applications and design the Reinforced earth wall.
CO-4	Describe the techniques for Stabilization and grouting.

### Course-7

Course Code:	A1CET315
Course Title:	PROJECT PLANNING AND MANAGEMENT
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know the concepts of project planning and management.
CO-2	Construct networks using PERT and CPM techniques.
CO-3	Update networks using resource allocation and resource smoothing
CO-4	List different management information systems.

### Course-8

Course Code:	AICET316
Course Title:	URBAN TRANSPORT PLANNING
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Estimate travel demand for an urban area.
CO-2	Collect data for urban transport planning.
CO-3	Prepare and calibrate urban transport model.
CO-4	Evaluate various alternative transportation facilities.

#### Course-9

Course Code:	AICET312
Course Title:	ADVANCED STRUCTURAL DESIGN
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Design and detail flat slabs and mat foundations as per Indian Standards.
CO-2	Analyze, design and detail Retaining walls as per Indian Standards.
CO-3	Design and detail water tanks and chimneys as per Indian Standards.
CO-4	Distinguish B and D regions, design and detail deep beams as per Indian Standards

#### Course-10

Course Code:	AICET321
Course Title:	REMOTE SENSING AND GIS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know the basic concepts of Aerial Photogrametry and Remote Sensing
CO-2	Analyse the images
CO-3	Tell the basic concept of GIS
CO-4	Apply the concepts of spatial analysis

#### Course-11

Course Code:	AICET323
Course Title:	SOLID WASTE MANAGEMENT
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know different types of sources, generation of solid waste
CO-2	Categorize various collection and transport systems of solid waste.
CO-3	Identify suitable methods of solid waste disposal and processing
CO-4	State the concepts of hazardous solid waste management

#### Course-12

Course Code:	AICET322
Course Title:	RURAL ROADS
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Know importance and problems associated with rural roads.
CO-2	Know geometric design standards of rural roads
CO-3	Design low cost rural roads.
CO-4	Know about sustainability through use of local and recycled road materials

#### Course-13

Course Code:	AICEL209
Course Title:	RS & GIS LAB/STAAD Pro. LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2

Course Outcomes:	
CO-1	able to perform analysis and design of pin and rigid jointed frames using Staad pro.
CO-2	Able to create database for thematic mapping and DEM
CO-3	Apply the knowledge of GIS to solve water resources engineering problems

#### Course-14

Course Code:	A1CEL210
Course Title:	ENVIRONMENTAL ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Measure the quality of water and waste water by performing various tests and interpret the results
CO-2	Measure pH and Electrical conductivity of given soil by conducting tests and and interpret the results.

### Semester-VIII Courses

#### Course-1

Course Code:	A1CEP601
Course Title:	Directed Study and Project Work
Theory / Lab:	Project Work
L-T-P-C:	0-0-0-10
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Identify a problem, work out methodology and provide a solution within ethical framework.
CO-3	Design and develop civil engineering solutions to problems utilizing the knowledge acquired.
CO-4	Communicate effectively and emerge as a successful team player.

### M.Tech. (Structural Engineering)

### Semester-I Courses

#### Course-1

Course Code:	A1STT101
Course Title:	ADVANCED MATHEMATICS
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Solve partial differential equations both analytically and numerically
CO-2	Evaluate the correlation coefficients of grouped data and coefficients of regression
CO-3	Find the optimal solution of linear programming problems , non linear programming problems.

#### Course-2

Course Code:	A1STT102
Course Title:	THEORY OF ELASTICITY
Theory / Lab:	theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to develop stress-strain relationships using stress tensor and transformation in elastic state
CO-2	elasticity
CO-3	Ability to execute a reasonable choice in parameters of the model (geometry, material properties, boundary conditions)
CO-4	Ability to solve problems of 2D and 3D problems of linear elasticity using boundary value concept

#### Course-3

Course Code:	A1STT103
Course Title:	ADVANCED REINFORCED CONCRETE
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	design structural elements satisfying serviceability criteria.

CO-2	Ability to determine Moment- Curvature relation for reinforced concrete flexural members
CO-3	Ability to design slender reinforced concrete columns and develop interaction curves
CO-4	Ability to design Grid floors and flat slabs in reinforced concrete structures.

#### Course-4

Course Code:	A1STT104
Course Title:	STRUCTURAL DYNAMICS AND EARTHQUAKE RESISTANT DESIGN
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to carry out Dynamic analysis of structures with Single and Multi degree of freedom
CO-2	Ability to plan the structure without irregularities which affect their seismic performance.
CO-3	Ability to calculate the seismic loads on structures and design the structure accordingly.
CO-4	Ability to do the ductile detailing of different members of the structure as per IS 13920.

#### Course-5

Course Code:	A1STT202
Course Title:	INDUSTRIAL STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Ability to knowledge plan functional requirement of industrial structures
CO-2	Ability to calculate wind loads and design a trusses
CO-3	Ability to design Gantry girder, Bunkers, silos, Chimneys and transmission line towers.

#### Course-6

Course Code:	A1STT203
Course Title:	ADVANCED CONCRETE TECHNOLOGY
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Ability to use of new materials in Concretes and understand how they affect the properties of concrete
CO-2	purposes
CO-3	Appreciate RMC MIX design for special concrete
CO-4	Appreciate need for NDT evaluation of concrete and have knowledge on the working principle of some of the methods.

#### Course-7

Course Code:	A1STT201
Course Title:	ADVANCED STRUCTURAL ANALYSIS
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Ability to carry out approximate analysis of framed structures.
CO-2	Ability to analyze non circular sections for torsion
CO-3	Ability to choose appropriate method of analysis for given structure
CO-4	Ability to analyze plane frame, plane truss and space truss using stiffness method of analysis

#### Course-8

Course Code:	A1STT204
Course Title:	DESIGN OF TALL STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to understand modern concepts evolved in structural systems.
CO-2	Ability to apply IS codal provisions for various types of loadings for tall structures.
CO-3	Ability to understand and differentiate various types of building frames and shear walls.
CO-4	Temperature effects.
CO-5	Ability to analyse a tall structure for its buckling and ability to perform first order and P-Delta analysis.
CO-6	Ability to understand Translational instability, Torsional instability Importance of dampers.

**Course-9**

Course Code:	A1STT205
Course Title:	DISASTER MANAGEMENT
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to understand of the disaster phenomenon and its different contextual aspects, impacts
CO-2	Ability to design, implement and evaluate research on disasters
CO-3	Ability to develop an integrated approach to disaster preparedness & awareness
CO-4	Ability to understand the requirements of an emergency management program.

**Course-10**

Course Code:	A1STT206
Course Title:	THEORY OF PLATES AND SHELLS
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to analyze isotropic and orthotropic plates subjected to bending and twisting.
CO-2	Ability to conceptualize the Navier's solution and energy method to analyze plates with different end conditions
CO-3	Ability to develop governing differential equation for circular plates and analyze for various loading and boundary conditions
CO-4	Ability to understand the structural behaviour of different types of shells using membrane theory and bending theory.
CO-5	Ability to analyze isotropic and orthotropic plates subjected to bending and twisting

**Course-11**

Course Code:	A1STL101
Course Title:	ADVANCED STRUCTURAL ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to study flexural and shear behavior of RC beams and their crack pattern
CO-2	Appreciate stress-strain behavior of different grades of concrete
CO-3	Perform Mix design and workability tests of self compacting concrete
CO-4	Skill to apply various repair techniques of RC elements
CO-5	Skill to perform various Non Destructive Testing of RC elements

**Semester-II Courses****Course-1**

Course Code:	A1STT105
Course Title:	SUBSTRUCTURE DESIGN
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Know various samples, sampler techniques and borings methods
CO-2	Ability to evaluate bearing capacity for shallow foundations
CO-3	Ability to evaluate the load carrying capacity of pile foundations

**Course-2**

Course Code:	A1STT106
Course Title:	FINITE ELEMENT METHOD
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Axisymmetric geometries.
CO-2	application in FEM
CO-3	Ability to apply Lagrangean and Serendipity methods to obtain Shape functions
CO-4	Ability to formulate Finite Element Equations for Iso-parametric elements
CO-5	Ability to apply FEM to structural mechanics problems with special emphasis on truss, beam, frame, and plate elements

**Course-3**

Course Code:	A1STT106
Course Title:	STABILITY OF STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to analyze Beam – columns with different boundary conditions
CO-2	Ability to study Elastic and In-elastic buckling characteristics of various structural elements
CO-3	Ability to solve Torsional and lateral buckling of beams

**Course-4**

Course Code:	A1STT108
Course Title:	PRE-STRESSED CONCRETE
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to analysis and Design of pre-tensioned as well as post-tensioned concrete beams
CO-2	Ability to analyse and design the anchorage systems for pre-stressing at the construction site
CO-3	Ability to design various pre-stressed structures
CO-4	Ability to predict short term and long term deflections in PSC members
CO-5	Ability to design Composite sections

**Course-5**

Course Code:	A1STT207
Course Title:	STRUCTURAL OPTIMIZATION
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Ability to apply the basic ideas in optimization to make the structures as lightly as possible.
CO-2	Ability to apply classical optimization techniques in engineering problems
CO-3	To apply the linear programming techniques in engineering optimization.
CO-4	Ability to perform plastic analysis of structure and design of structural elements based on minimum weight concept.

**Course-6**

Course Code:	A1STT208
Course Title:	BRIDGE ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to apply various IRC standards for live load impact effect.
CO-2	Ability to design the interior panel of the deck slab using Pigeaud's method.
CO-3	Ability to design various types of culverts with their reinforcement detailing
CO-4	Ability to design a bridge with plate girders having end bearing and intermediate stiffeners
CO-5	Ability to analyse the stability of abutments and piers
CO-6	Ability to understand the effect of various loads like wind load, seismic load, horizontal forces due to water currents on bridges

**Course-7**

Course Code:	A1STT209
Course Title:	REPAIR AND REHABILITATION OF STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to study causes of concrete distress and deterioration
CO-2	Knowledge of different materials and techniques for repair
CO-3	Knowledge of repair and rehabilitation of deteriorated members
CO-4	Appreciate need and importance of demolition

**Course-8**

Course Code:	A1STT210
Course Title:	STRUCTURAL RELIABILITY
Theory / Lab:	Theory
L-T-P-C:	3 0 0 3
Course Outcomes:	
CO-1	Ability to use the basic concepts of statistics in probability.
CO-2	Ability to understand the concept of probability and apply it.
CO-3	Able to compute reliability indices for simple structural engineering problems as beams, trusses.
CO-4	frames.

#### Course-9

Course Code:	A1STT211
Course Title:	DESIGN OF HYDRAULIC STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to design weirs and barrages
CO-2	Ability to design over flow and non over flow gravity dams
CO-3	Ability to design canal regulating structures ( canal drops and regulators)
CO-4	Ability to design cross drainage works
CO-5	Ability to design weirs and barrages

#### Course-10

Course Code:	A1STT212
Course Title:	PLASTIC ANALYSIS AND DESIGN OF STEEL STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to calculate the concept of plastic moment carrying capacity of structures
CO-2	Ability to formulate mechanism and plastic moment
CO-3	Ability to perform minimum weight design of the structures

#### Course-11

Course Code:	
Course Title:	COMPUTER APPLICATIONS IN STRUCTURAL ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	3 1 0 4
Course Outcomes:	
CO-1	Ability to design different structures using commercial FE analysis software (STAAD Pro).
CO-2	Ability to develop Excel Spread sheets for various components of structures
CO-3	Ability to Analysis of Simple beams using ANSYS software

### Semester-III Courses

#### Course-1

Course Code:	A1STT109
Course Title:	RESEARCH METHODOLOGIES
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Identify appropriate topics for research work.
CO-2	Conduct literature review of the emerging topics in core research area.
CO-3	Frame and design major experimental methods to carry out research.
CO-4	Know of the ethical practices in research, academic integrity and plagiarism.

#### Course-2

Course Code:	A1STV401
Course Title:	COMPREHENSIVE VIVA
Theory / Lab:	Lab

L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Exhibit strong technical knowledge of various courses covered in the program.
CO-2	Explain clearly technical and practical concepts of the courses covered in the program.
CO-3	Present with confidence the real time application of the concepts covered in the program.

#### Course-3

Course Code:	A1STR401
Course Title:	Pre-requisite Study
Theory / Lab:	Lab
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Acquire basic knowledge of the pre-requisite courses that supplement the project thesis work.
CO-2	Aware of the nuances of the important concepts that are to be applied in the project thesis work.
CO-3	Present in the form of a report the concepts that are covered during the study.

#### Course-4

Course Code:	A1STS501
Course Title:	SEMINAR
Theory / Lab:	Lab
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Conduct literature review of an emerging area in core research domain.
CO-2	Prepare and submit a concise report of a selected topic in core research domain.
CO-3	Communicate effectively through a seminar the work carried out on the selected topic.

#### Course-5

Course Code:	A1STT501
Course Title:	Project Phase-I
Theory / Lab:	Lab
L-T-P-C:	0-0-0-8
Course Outcomes:	
CO-1	Identify research topic in the core research domain.
CO-2	Conduct literature review of the research domain.
CO-3	Frame objectives of the project thesis.
CO-4	Design methodology of the project thesis.

### Semester-IV Courses

#### Course-1

Course Code:	A1STT502
Course Title:	Project Phase-II
Theory / Lab:	Lab
L-T-P-C:	0-0-0-16
Course Outcomes:	
CO-1	Develop experimental methodology for the project thesis.
CO-2	Analyse, test and design solutions for the selected project thesis.
CO-3	Prepare a detailed project thesis report in line with ethical and academic regulations.

# Dept. of EEE

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

## B.Tech. (Electrical and Electronics Engg)

### Semester-I Courses

Course-1	
Course Code:	A1MAT001
Course Title:	ENGINEERING MATHEMATICS-I
Theory / Lab:	Theory
L-T-P-C:	3 - 1* - 0 - 3
Course Outcomes:	
CO-1	Students will be able to apply the knowledge of solving 1st order & 1st degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems
CO-2	Student will be able to find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Students will be able to apply the concepts of Maxima and Minima for finding extreme values
CO-4	Student will be able to formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation.

Course-2	
Course Code:	A1CYT001
Course Title:	ENGINEERING CHEMISTRY
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Students gain the knowledge about water used in industries (boilers etc) and for drinking purpose, difference between hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis
CO-2	Students gain the knowledge of galvanic cells, concentration cells, applications of ion selective electrodes, Conductometry and Potentiometry to understand the principle and applications of electrochemistry. Topics on electrochemical cells, batteries and fuel cells make students understand the alternate sources of energy and also help them to tackle problems of corrosion and control
CO-3	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection
CO-4	Students gain the knowledge on structure, synthesis properties and applications of polymers, additives to be mixed with polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and biodegradable polymers, fibre reinforced plastics and bullet proof plastics, synthetic plastics that are essential to latest technology
CO-5	Student gain the knowledge on the determination of calorific value by bomb calorimeter, the proximate and ultimate analysis of coal, Fractional distillation of crude, followed by catalytic cracking to obtain the liquid fuels for the functioning of internal combustion engine, octane and cetane number, which have large focus on oil industry
CO-6	Students gain knowledge on advanced materials like carbon nano tubes and fullerenes, their properties and applications, manufacturing of cement, need for green chemistry, principles of green chemistry solar cells and greenhouse effect and their importance

Course-3	
Course Code:	A1CET001
Course Title:	BASICS OF CIVIL & MECHANICAL ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 3
Course Outcomes:	
CO-1	Student will be able to understand floor area, plinth area, and building materials such as brick, cement, concrete, steel
CO-2	Student will be able to understand the concepts of surveying, infrastructure such as buildings, roads, bridges, dams
CO-3	Student will be able to understand the working and function of various components of systems and subsystems of I.C. Engines, turbines, pumps and refrigerating systems
CO-4	Student will be able to identify various types of mechanical components suitable for power transmission
CO-5	Student will be able to understand Casting, forming and different metal joining processes like Welding, Brazing, Soldering

Course-4	
Course Code:	A1MED001
Course Title:	ENGINEERING DRAWING
Theory / Lab:	Lab

L-T-P-C:	1 - 0 - 3 - 3
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids
CO-3	Student will be able to produce isometric projection from orthographic projections and vice-versa

#### Course-5

Course Code:	A1CIT001
Course Title:	COMPUTER PROGRAMMING
Theory / Lab:	Theory
L-T-P-C:	3 - 1* - 0 - 3
Course Outcomes:	
CO-1	Have the ability to write a formal algorithmic solution for the given problem & explain the features of C like types including scalar & vector types, operators, expressions, expression evaluation, operator precedence, sequential, conditional & iterative constructs
CO-2	Have the ability to use modular programming constructs of C while appreciating different ways of exchanging inputs and outputs among modules and different memory allocation strategies in C
CO-3	Have the ability to define & use user defined data types using C constructs and write C programs that handles files
CO-4	Grasp the significance of primary constructs & methodology of procedural language C and appreciate the orthogonality of the same in writing reasonably complicated programs
CO-5	Grasp the significance of type extensibility in C, need for address as a data type and library functions for dealing with files in writing more complicated programs
CO-6	Fully appreciate the art of procedural programming in C and develop programs optimally using the full feature set of C language

#### Course-6

Course Code:	A1EHL001
Course Title:	ENGLISH LANGUAGE PRACTICE -I
Theory / Lab:	Lab
L-T-P-C:	1 - 0 - 2 - 2
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/her professional requirement
CO-5	Student shall be able to Speak in English well
CO-6	Student shall be able to understand and analyze the core components of his study well

#### Course-7

Course Code:	A1CYL001
Course Title:	ENGINEERING CHEMISTRY LAB
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Students will gain knowledge on the method of determination of acid/base, total hardness, iron and zinc contents in the sample solution
CO-2	Students will gain knowledge on the principles of conductometric, potentiometric, pH metric and colorimetric methods of determination
CO-3	Students will understand in construction of galvanic cell, determination of calorific value, and preparation of biodiesel

#### Course-8

Course Code:	A1CIL001
Course Title:	COMPUTER PROGRAMMING LABORATORY
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Have the ability to pick and choose the required built-in data-types for the specific problem and utilize the full power of operators and expression evaluation of C Language while writing programs for any given problem
CO-2	Have the ability to use choose and utilize different control constructs in C Language depending on the context of the need while developing a C program for any specific problem
CO-3	Have the ability to divide the parts of a program solution into functions and write a program in C as an inter-play of functions using each other in what is called modular programming
CO-4	Have the ability to fully appreciate the concept and utilization of single and multi-dimensional arrays of different data-types in C
CO-5	Have the ability to appreciate the concept of address variables and understand the benefits and utilization of the same along with under the flexibility provided by dynamic memory allocation and its comparison to static memory allocation

CO-6	Have the ability to appreciate the concept of user defined data types and utilize these concepts to define new composite data types as required for implementing solutions to a problem in a C program
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## Semester-II Courses

### Course-1

Course Code:	A1MAT002
Course Title:	MATHEMATICAL METHODS
Theory / Lab:	Theory
L-T-P-C:	3 - 1* - 0 - 3
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation
CO-4	Student will be able to solve Initial value problems through numerical methods.
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems

### Course-2

Course Code:	A1PYT002
Course Title:	APPLIED PHYSICS
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Student will be able to understand the phenomena of interference, diffraction and polarization exhibited by light waves
CO-2	Student shall understand about laser, its characteristics and production with an example and application of laser in specific to optic fiber
CO-3	The student shall understand about different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction
CO-4	Student will be able to understand foundation principles of quantum mechanics and semiconductors
CO-5	Student shall understand about response of the materials in presence of electric and magnetic fields and the basic laws of electromagnetic waves

### Course-3

Course Code:	A1CHT001
Course Title:	ENVIRONMENTAL STUDIES
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Student will have knowledge on the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
CO-2	Student will have knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
CO-3	Student will have knowledge on various attributes of the pollution and their impact and measures to reduce or control the pollution along with waste management practices
CO-4	Student will have knowledge on social issues both rural and urban environment and the possible means to combat the challenges
CO-5	Student will have knowledge on the environmental legislations of India and the first global initiatives towards sustainable development, environmental assessment and the stages involved in EIA and the environmental audit

### Course-4

Course Code:	A1EET002
Course Title:	ELECTRICAL CIRCUIT ANALYSIS – I
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 3
Course Outcomes:	
CO-1	Identify the appropriate 'Network reduction' technique for a particular application
CO-2	Differentiate the Electrical circuit performance with variation of one of its parameters
CO-3	Apply the principles of Magnetism in Electrical circuits
CO-4	Analyze the Electrical network behaviour for various excitation types
CO-5	Design and develop suitable DC or Single-phase Electrical circuit for a particular application
CO-6	Assess the Electrical Network performance by a suitable technique

### Course-5

Course Code:	A1MAT104
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Course Title:	ENGINEERING MATHEMATICS-II
Theory / Lab:	Theory
L-T-P-C:	3 - 1* - 0 - 3
Course Outcomes:	
CO-1	Student will be able to solve boundary value problems using Fourier series and Fourier transforms
CO-2	Student will be able to find the lengths ,surface area of revolution and volume of revolution for various curves
CO-3	Student will be able to understand the physical significance of vector operators
CO-4	Student will be able to apply vector integral theorems to evaluate Line, Surface and Volume integrals with ease

#### Course-6

Course Code:	A1MEW001
Course Title:	BASIC ENGINEERING WORKSHOP
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Will be aware of the basic engineering trades and be able to execute related work at a rudimentary level
CO-2	Will be able to select and use proper tools for the different tasks
CO-3	Will be able to apply knowledge and skills developed to handle real-life situations in these areas

#### Course-7

Course Code:	A1EHL002
Course Title:	ENGLISH LANGUAGE PRACTICE -II
Theory / Lab:	Lab
L-T-P-C:	1 - 0 - 2 - 2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly
CO-3	Student shall be able to participate well in debates and discussions
CO-4	Student shall be able to write both Technical and General reports well
CO-5	Student shall be able prepare resume well and face the interviews confidently
CO-6	Student shall communicate confidently and effectively

#### Course-8

Course Code:	A1PYL002
Course Title:	APPLIED PHYSICS LAB
Theory / Lab:	0 - 0 - 3 - 2
L-T-P-C:	
Course Outcomes:	
CO-1	Student will be able to experimentally observe interference and diffraction patterns of light waves due to different optical devices and determine the given parameters.
CO-2	Student shall understand the tir process in the optic fiber experimentally and will be able to determine the numerical aperture and bending loss of the optic fiber
CO-3	Student shall experimentally determine the temperature coefficient of resistance, energy gap, type of charge carriers and concentration of charge carriers in a semiconductor and to study the I-V characteristics of the given p-n junction diode.
CO-4	Student shall experimentally study the magnetic hysteresis and determine related parameters and study the variation of magnetic fields due to currents and to study the frequency response of LCR circuits.

## Semester-III Courses

#### Course-1

Course Code:	A1EET201
Course Title:	Electronic Devices & Circuits - I
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Identify the characteristics of basic electronic devices such as diodes, transistors, Field effect transistors
CO-2	Differentiate the effect of Positive and Negative Feedback on various electronic circuits
CO-3	Acquire experience in building and trouble-shooting simple electronic circuits
CO-4	Analyze the DC bias circuitry of BJT and FET
CO-5	Design simple circuits containing non-linear elements such as transistors using the concepts of load lines, operating point
CO-6	Assess performance of various filters which are used in Rectifiers

#### Course-2

Course Code:	A1EET202
Course Title:	Electrical Circuit Analysis - II
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4

Course Outcomes:	
CO-1	Identify Network response for various Excitation types under different operating conditions
CO-2	Differentiate the Network response for various Excitation types
CO-3	Apply the methods of Synthesizing an Electrical Network
CO-4	Analyze Network behavior under different operating conditions
CO-5	Design and develop a suitable Three-phase circuit for a particular application
CO-6	Assess Harmonics in the Network response

### Course-3

Course Code:	A1EET203
Course Title:	Electro Magnetic Field Theory
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Identify the appropriate vector analysis concepts for a particular application
CO-2	Differentiate between electrical field intensities due to various charge configurations
CO-3	Identify the fundamental laws of electromagnetic theory and apply these laws in the development of the theory for power transmission lines and electrical machines
CO-4	Analyze the behavior of thesis fields in different medias
CO-5	Design and develop various types of capacitances and inductances for all types of configurations
CO-6	Assess performance of various materials

### Course-4

Course Code:	A1EET204
Course Title:	Signals & Systems
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Understand the classification of various signals and systems and also to analyze their properties
CO-2	Transform signals in time domain to frequency domain using Fourier series and Fourier transform
CO-3	Know about sampling theorem and its application in re-construction of a signal
CO-4	Analyze filter characteristics and properties of linear time variant and invariant systems
CO-5	Analyze Continuous time signals using Laplace Transforms in the complex frequency plane and discrete time systems using Z-Transforms
CO-6	Interpret signals and analyze system response using convolution integral

### Course-5

Course Code:	A1EET205
Course Title:	Electrical Machines - I
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Select the appropriate machine for a particular application
CO-2	Distinguish various types of machines with respect to their application
CO-3	Appreciate the applications of DC machines and Transformers
CO-4	Analyze the performance of DC machines and Transformers
CO-5	Design and develop various machines based on requirement
CO-6	Assess performance of various machines

### Course-6

Course Code:	A1MAT110
Course Title:	Complex Variables & Statistical methods
Theory / Lab:	Theory
L-T-P-C:	3 - 1* - 0 - 3
Course Outcomes:	
CO-1	Student will be able to construct the conjugate harmonic functions and Orthogonal Trajectories
CO-2	Student will be able to evaluate integrals of complex functions in the given region
CO-3	Student will be able to estimate the population parameters using sample data
CO-4	Student will be able to test the hypothesis for large samples and small samples

### Course-7

Course Code:	A1EEL201
Course Title:	Electrical Circuits Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Identify appropriate Network reduction technique for a particular application
CO-2	Differentiate between various types of Network reduction techniques
CO-3	Apply various methods of circuit analysis and circuit synthesis
CO-4	Analyze various Electrical networks by different methods under various load conditions

CO-5	Design and develop various Electrical circuit models for analysis purpose
CO-6	Assess the performance of Electrical networks under different operating conditions for different excitations

#### Course-8

Course Code:	A1EEL202
Course Title:	Electrical Machines - I Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Design and conduct experiments on DC machines and single phase transformers, as well as to analyse and interpret data
CO-2	Understand the basic testing procedures for DC motors for evaluation of their performance
CO-3	Demonstrate load characteristics of Dc generators
CO-4	Illustrate performance of a given single phase transformer
CO-5	Demonstrate separation of eddy current and hysteresis losses in a single phase transformer through suitable experiment
CO-6	Compare various tests available for evaluating the performance of machines

#### Course-9

Course Code:	A1EHT512
Course Title:	GENERAL APTITUDE
Theory / Lab:	Audit Course - I
L-T-P-C:	2 - 0 - 0 - 0
Course Outcomes:	
CO-1	Students will be able to improve their employability skills

### Semester-IV Courses

#### Course-1

Course Code:	A1EET206
Course Title:	Electronic Devices & Circuits - II
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Identify the appropriate semiconductor device for a particular application
CO-2	Differentiate between various types of electronic switching devices
CO-3	Apply the principles of synchronization for various signal generators
CO-4	Analyze the circuits involving discrete components
CO-5	Design and develop circuits to generate square, pulse wave forms using discrete electronic components

#### Course-2

Course Code:	A1EET207
Course Title:	Electrical Machines - II
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Select the appropriate machine for a particular application
CO-2	Distinguish various types of machines with respect to their application
CO-3	Appreciate the applications of AC machines
CO-4	Analyze the performance of AC machines
CO-5	Design and develop various machines based on requirement
CO-6	Assess performance of various machines

#### Course-3

Course Code:	A1EET208
Course Title:	Power Generation & Control
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Able to identify the different components of conventional and renewable power generation
CO-2	Able to explain the working of conventional and renewable power generation plants
CO-3	Able to analyze the effect of Load factor, Demand factor and Diversity factor on the Cost of Generation of Electrical power
CO-4	Able to apply control and compensations schemes on a power system
CO-5	Able to identify different Tariff types applicable to consumers based on their load demand

#### Course-4

Course Code:	A1EET209
Course Title:	Digital Electronics
Theory / Lab:	Theory

L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Identify the appropriate logic gates for designing digital circuits
CO-2	Differentiate between combination and sequential circuits
CO-3	Apply the theorems of Boolean algebra for minimizing and realizing the Boolean functions
CO-4	Analyze the various Programmable Logic Devices
CO-5	Design and develop various Finite State Machine for implementing Boolean functions

#### Course-5

Course Code:	A1EET210
Course Title:	Control Systems
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Identify the basic elements and structure of control system
CO-2	Explain the concept of time domain Analysis
CO-3	Apply knowledge of s-domain methods to predict system performance
CO-4	Assess the stability of the control system
CO-5	Design Compensators to achieve desired performance
CO-6	Analyse control system using State space methods

#### Course-6

Course Code:	A1EET301
Course Title:	Data Structures
Theory / Lab:	Theory
L-T-P-C:	2 - 0 - 2 - 3
Course Outcomes:	
CO-1	To describe the usage of various data structures
CO-2	To explain the operations for maintaining common data structures
CO-3	To write programs using linked structures such as List, trees, and graphs
CO-4	To design and apply appropriate data structures for solving computing problems
CO-5	To implement different data structures and related algorithms
CO-6	To choose the appropriate data structure to solve a programming problem

#### Course-7

Course Code:	A1EEL203
Course Title:	Electronic Devices & Circuits Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Understand and Analyse the different types of diodes, operation and its characteristics
CO-2	Design and analyse the DC bias circuitry of BJT
CO-3	To analyze and design diode application circuits and amplifier circuits employing BJT, FET devices

#### Course-8

Course Code:	A1EEL204
Course Title:	Electrical Machines - II Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Design and conduct experiments on single phase induction motors, three phase induction motors, alternators and synchronous motors, as well as to analyse and interpret data
CO-2	Understand the basic testing procedures for single phase induction motors and three phase induction motors for evaluation of their performance
CO-3	Demonstrate the equivalent circuit parameters of single phase induction motors, three phase induction motors and synchronous machines
CO-4	Illustrate the ways of synchronizing a alternator to infinite bus bars
CO-5	Demonstrate the effect of change of excitation of an alternator
CO-6	Compare various methods available for determining voltage regulation of alternators

#### Course-9

Course Code:	A1EHT510
Course Title:	SOFT SKILLS – I
Theory / Lab:	Audit Course
L-T-P-C:	1 - 0 - 2 - 0
Course Outcomes:	
CO-1	Students shall develop their interpersonal skills and shall be an effective goal oriented team player
CO-2	Students shall evolve as professional with idealistic, practical and moral values
CO-3	Students shall develop communication and problem solving skills
CO-4	Students develop improve their attitude towards life and understand its influence on their behavior.

## Semester-V Courses

### Course-1

Course Code:	A1EET211
Course Title:	Linear & Digital IC Applications
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Understand various linear and non-linear Applications of Op-Amp
CO-2	Apply the principles of synthesis to design various types filters
CO-3	Design ADC and DAC with Op-Amps
CO-4	Design circuits to generate various types of signals

### Course-2

Course Code:	A1EET212
Course Title:	Power Electronics
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Classify the characteristics of various power semiconductor devices and select the appropriate semiconductor device for a particular application
CO-2	Design triggering circuits for SCR
CO-3	Analyze the operation of single phase and three phase full-wave converters and analyze harmonics in the input current
CO-4	Explain the operation of single phase AC voltage controller and cyclo converter
CO-5	Analyze the operation of different DC-DC converters
CO-6	Explain the working of inverters and application of PWM techniques for voltage control and harmonic mitigation

### Course-3

Course Code:	A1EET213
Course Title:	Power Transmission and Distribution
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Determine the electrical & mechanical parameters of the transmission lines
CO-2	Analyse the voltage and current relationship in short, medium and long transmission lines
CO-3	Explain various factors affecting the performance of the transmission lines
CO-4	Demonstrate the performance of various overhead line insulators and UG Cables
CO-5	Demonstrate AC and DC distribution systems
CO-6	Ability to design an earthing for substation

### Course-4

Course Code:	A1EET214
Course Title:	Electrical Measurements & Instrumentation
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Classify the electrical measuring instruments
CO-2	Identify the proper method of measurement and instrument for various electrical parameters
CO-3	Differentiate Analog and Digital measuring instruments
CO-4	Explain the construction and working of analog and digital measuring instruments
CO-5	List the uses and applications of signal analysers

### Course-5

Course Code:	A1EET305
Course Title:	Special Electrical Machines
Theory / Lab:	Theory (Core Elective - II)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	An ability to understand the principle of operation and construction details of Stepper motor, Switched Reluctance motor, PMDC & Permanent Magnet Brushless DC motors and Linear Induction motors
CO-2	Able to analyze the process of Electronics commutation and the generation of Hall signals according to the rotor position of BLDC motors
CO-3	Will develop an ability to analyze the concept of Thrust development in linear induction motors and the transverse & edge effects
CO-4	Ability to analyze the characteristics of different special machines and its application depending on the performance

CO-5	Able to apply the knowledge of single sided & double-sided linear induction motors in electric traction system
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#### Course-6

Course Code:	A1EET309
Course Title:	Artificial Intelligence Techniques
Theory / Lab:	Theory (Core Elective - III)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Understand the characteristics and problem solving methods of Artificial Intelligent System
CO-2	Know the importance of neural network and its various functions and models
CO-3	Apply the training and learning algorithms for various networks
CO-4	Understand the fundamentals of genetic algorithms by various selection processes
CO-5	Employ the classic fuzzy sets in fuzzy rule base and decision making
CO-6	Understand the various applications of neural network applications in electrical engineering

#### Course-7

Course Code:	A1EEL205
Course Title:	Control Systems Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Determine the transfer function of systems
CO-2	Understand importance of controllers and compensators
CO-3	Understand servo systems
CO-4	Understand and analyze the performance and working of control system components
CO-5	Analyze the time domain and frequency response analysis of control systems
CO-6	Design lag, lead and lag-lead compensators.

#### Course-8

Course Code:	A1EEL206
Course Title:	IC & PDC Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Ability to understand the importance of ICs and can select ICs for given Application
CO-2	Ability to design various circuits using discrete elements and ICs
CO-3	Ability to design active filters for given specifications
CO-4	Ability to understand various control circuits
CO-5	Ability design various signal generators like square, wave triangular and etc

#### Course-9

Course Code:	A1EHT511
Course Title:	SOFT SKILLS – II
Theory / Lab:	Audit Course
L-T-P-C:	1 - 0 - 2 - 0
Course Outcomes:	
CO-1	Students shall develop their interpersonal skills and shall be an effective goal oriented team player
CO-2	Students shall evolve as professional with idealistic, practical and moral values
CO-3	Students shall develop communication and problem solving skills
CO-4	Students develop improve their attitude towards life and understand its influence on their behavior

### Semester-VI Courses

#### Course-1

Course Code:	A1EET215
Course Title:	Power Semiconductor Drives
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Identify the appropriate electric drive system for a particular application
CO-2	Differentiate between operations of various types of drives
CO-3	Understand the operation of single and multi quadrant operation of drive
CO-4	Analyze any type of 1 $\Phi$ & 3 $\Phi$ rectifiers fed to DC motors as well as chopper fed to DC motors
CO-5	Design and model various closed loop controllers for controlling the electrical drives
CO-6	Assess performance of both D.C/A.C drives

#### Course-2

Course Code:	A1EET216
Course Title:	Computer Methods in Power Systems & Protection
Theory / Lab:	Theory

L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Understand power system modeling for normal and abnormal conditions
CO-2	Acquire knowledge of solving power system problems under normal and abnormal conditions
CO-3	Understand condition of the system when it is subjected to small signal and large signal dynamics
CO-4	Demonstrate various numerical methods to study load flows, short circuit conditions and stability of power systems
CO-5	Demonstrate computer relaying techniques
CO-6	Understand computer based protection schemes of generators, transformers and transmission lines

#### Course-3

Course Code:	A1EET217
Course Title:	EMBEDDED PROCESSORS
Theory / Lab:	Theory
L-T-P-C:	3 - 1 - 0 - 4
Course Outcomes:	
CO-1	Recognize various microcontrollers
CO-2	Recall the basics of AVR microcontroller and its applications
CO-3	Recognize the importance of peripheral devices and their interfacing
CO-4	Understand the features and operation of 8051 micro controller
CO-5	Interpret the features and operation of AVR micro controller
CO-6	Implement microcontroller based methods for measurement of electrical quantities, motor control techniques and serial communication buses

#### Course-4

Course Code:	A1EET310
Course Title:	Digital Control Systems
Theory / Lab:	Theory (Core Elective - IV)
L-T-P-C:	3 - 1 - 0 - 3
Course Outcomes:	
CO-1	Apply Z-Transform and the concept of state space to test the performance of Digital Control Systems
CO-2	Inspect controllability and observability of Digital control systems
CO-3	Identify Suitable Compensators to achieve the desired performance of System
CO-4	Analyse the performance of Digital control systems
CO-5	Test the stability of Digital control systems
CO-6	Design compensators and controllers by pole placement technique to achieve the desired performance of conventional Methods

#### Course-5

Course Code:	A1EET314
Course Title:	Utilization of Electrical Energy
Theory / Lab:	Theory (Core Elective - V)
L-T-P-C:	3 - 1 - 0 - 3
Course Outcomes:	
CO-1	Able to identify a suitable motor for electric drives and industrial applications
CO-2	Able to identify most appropriate heating or welding techniques for suitable applications
CO-3	Able to understand various level of luminosity produced by different illuminating sources.
CO-4	Able to estimate the illumination levels produced by various sources and recommend the most efficient illuminating sources and should be able to design different lighting systems by taking inputs and constraints in view
CO-5	Able to determine the speed/time characteristics of different types of traction motors
CO-6	Able to estimate energy consumption levels at various modes of operation

#### Course-6

Course Code:	A1MET401
Course Title:	INTRODUCTION TO ROBOTICS
Theory / Lab:	Theory (Open Elective - I)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Identify components and classification of robot
CO-2	Capable of performing transformation in developing forward and inverse kinematic problems
CO-3	Select actuators and sensors for different robot applications
CO-4	Design work cell and select robots for applications

#### Course-7

Course Code:	A1CET403
Course Title:	ROAD SAFETY ENGINEERING
Theory / Lab:	Theory (Open Elective - I)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	

CO-1	Recall the road safety policies in place to prevent accidents
CO-2	Identify different types of road accidents and their causes
CO-3	Summarize different methods to enhance road safety
CO-4	Recall road safety audit procedures

#### Course-8

Course Code:	A1CIT405
Course Title:	Web Designing and Development
Theory / Lab:	Theory (Open Elective - I)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Analyze a web page and identify its elements and attributes
CO-2	Create web pages using XHTML and Cascading Styles sheets
CO-3	Build dynamic web pages
CO-4	Build web applications using PHP
CO-5	Deployment of web applications using server technology
CO-6	Establishing database connectivity

#### Course-9

Course Code:	A1EEL207
Course Title:	Electrical Measurements & Instrumentation Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Measure various electrical quantities with accuracy, precision, resolution
CO-2	Calibrate various measuring instruments
CO-3	Verify the errors of different instruments for measurement of electrical quantities

#### Course-10

Course Code:	A1EEL208
Course Title:	Power Electronics Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Describe the characteristics of different semiconductor devices and select suitable switch choices for a given application
CO-2	Identify, analyze and design suitable triggering circuits for given application
CO-3	Explain the operation and analysis of different AC to DC converters.
CO-4	Explain the operation and analysis of different AC to AC converters
CO-5	Explain the operation of DC to AC converters and differentiate single phase parallel bridge inverter with PWM inverter

## Semester-VII Courses

#### Course-1

Course Code:	A1ECT219
Course Title:	Principles of Communication Engineering
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Have the ability to explain need for modulation
CO-2	Utilize the significance of Sampling to practical solutions in future prospects
CO-3	Have ability to apply the Concepts of Modulation, Demodulation and Multiplexing in professional tasks.
CO-4	Have the ability to understand the basic building blocks in advanced communication systems

#### Course-2

Course Code:	A1MST001
Course Title:	Managerial Economics & Financial Analysis
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Able to understand application of economics in decision making
CO-2	Able to develop and determine cost efficient production through optimization
CO-3	Able to aware various business environmental factors and the impact
CO-4	Able to do financial analysis of the firm to know its performance from different parameters.

#### Course-3

Course Code:	A1EET316
Course Title:	Power System Operation & Control
Theory / Lab:	Theory (Core Elective - VI)

L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Compute optimal scheduling of thermal power generators with and without transmission line losses
CO-2	Explain hydrothermal scheduling and unit commitment problem
CO-3	Model and analyze single area power system in controlled and uncontrolled case
CO-4	Model and analyze two area power system in controlled and uncontrolled case
CO-5	Explain reactive power control and its compensation
CO-6	Explain the necessity and the effect of computer control in power systems

#### Course-4

Course Code:	A1EET320
Course Title:	Switchgear and protection
Theory / Lab:	Theory (Core Elective - VII)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	Explain the importance of protection and usage of grounding techniques and lightning arresters
CO-1	Explain about the operation of electromagnetic relays and their usage in respective applications
CO-2	Explain the principles and operations of different types of static relays and current era of numerical relays
CO-3	Explain the basic principles of arc interruption, circuit breaking principles, operation of various types of circuit breakers
CO-4	Explain various types of faults in generators and transformers and different types of protective schemes
CO-5	Impart knowledge of various protective schemes used for induction motors, feeders and busbars
CO-6	

#### Course-5

Course Code:	A1EET324
Course Title:	Power Quality
Theory / Lab:	Theory (Core Elective - VIII)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Recognize various types of power quality problems, power quality standards defined by various committees
CO-2	Describes the events behind the transients and their classification & effects
CO-3	Distinguish between voltage & current harmonics and harmonics & transients
CO-4	Distinguish between short and long duration voltage variations
CO-5	Relate the Distribution generation(DG) and power quality
CO-6	Monitor and Diagnostic various power quality problems also modelled by using mathematical simulating tools

#### Course-6

Course Code:	A1MET401
Course Title:	INTRODUCTION TO ROBOTICS
Theory / Lab:	Theory (Open Elective - II)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Identify components and classification of robot
CO-2	Capable of performing transformation in developing forward and inverse kinematic problems
CO-3	Select actuators and sensors for different robot applications
CO-4	Design work cell and select robots for applications

#### Course-7

Course Code:	A1CET403
Course Title:	ROAD SAFETY ENGINEERING
Theory / Lab:	Theory (Open Elective - II)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Recall the road safety policies in place to prevent accidents
CO-2	Identify different types of road accidents and their causes
CO-3	Summarize different methods to enhance road safety
CO-4	Recall road safety audit procedures

#### Course-8

Course Code:	A1CET401
Course Title:	PROJECT PLANNING AND MANAGEMENT
Theory / Lab:	Theory (Open Elective - II)
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Know the concepts of project planning and management
CO-2	Construct networks using PERT and CPM techniques
CO-3	Update networks using resource allocation and resource smoothing
CO-4	List different management information systems

#### Course-9

Course Code:	A1EEL209
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Course Title:	Power Systems Laboratory
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Find the sequence impedance parameters of alternator and transformer
CO-2	Measure the Dielectric strength and leakage current of oil and insulators
CO-3	Draw the Break-down characteristics & power angle characteristics of sphere gap and synchronous machine respectively

#### Course-10

Course Code:	A1EEL210
Course Title:	Embedded Processors Lab
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Do basic arithmetic operations
CO-2	Generate required triggering pulses for various applications
CO-3	Control the motor using embedded processors
CO-4	Interface LCD using 8051 micro controller
CO-5	Measure electrical quantities
CO-6	Communicate with different devices

### Semester-VIII Courses

#### Course-1

Course Code:	A1EEP601
Course Title:	Directed Study & Project
Theory / Lab:	
L-T-P-C:	0 - 0 - 15 - 10
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

### M.Tech. (Power Systems)

### Semester-I Courses

#### Course-1

Course Code:	A1EPS201
Course Title:	POWER SYSTEM OPERATION & CONTROL
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Understand power-frequency dynamics
CO-2	Apply control and compensations schemes on a power system
CO-3	Adopt contingency analysis and selection methods to improve system security

#### Course-2

Course Code:	A1EPS202
Course Title:	HVDC TRANSMISSION
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Distinguish between HVAC and HVDC transmission
CO-2	Grasp the key technology and system composition in modern HVDC design
CO-3	Analyze various converters used in HVDC Transmission
CO-4	Derive the harmonics in HVDC and design the filters
CO-5	Draw the converter control characteristics
CO-5	Identify the various types of faults in converter and in HVDC lines

#### Course-3

Course Code:	A1EPS203
Course Title:	MODELING & SIMULATION OF POWER ELECTRONIC SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4

Course Outcomes:	
CO-1	Understand the process of developing mathematical model of Power Electronic Devices and computer simulation techniques widely used for Power electronic Converters
CO-2	Explains a mathematical model and Simulation of AC-DC and DC-DC Converters
CO-3	Device a mathematical model and Simulation of DC motor drive systems
CO-4	Device a mathematical model and Simulation of Induction Drive Systems
CO-5	Device a mathematical model and Simulation of Synchronous motor drive systems

#### Course-4

Course Code:	A1EPS205
Course Title:	RENEWABLE ENERGY SOURCES
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Describe the principles of renewable energy production from various renewable sources
CO-2	Distinguish between the sustainable energy sources and fossil energy sources
CO-3	Describe the main components of different renewable energy systems
CO-4	Perform simple techno-economical assessments of renewable energy systems
CO-5	Compare different renewable energy technologies and choose the most appropriate based on local conditions
CO-6	Explain the technological basis for harnessing renewable energy sources

#### Course-5

Course Code:	A1EPS301
Course Title:	EMBEDDED SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Describe the evolution of microprocessors and various types of architectures
CO-2	Explain the architecture and features of 8051, PIC 16F, Atmega & ARM family of processors
CO-3	Demonstrate the concepts learnt to write assembly language programs, simulate and debug in IDEs for 8051
CO-4	Illustrate the concepts learnt to write simple programs in C for AVR microcontrollers
CO-5	Device microcontroller based methods for measurement of electrical quantities, motor control techniques and serial communication buses

#### Course-6

Course Code:	A1EPS302
Course Title:	DIGITAL SIGNAL PROCESSING
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Describe the discrete-time signals analytically and visualize them in the time domain
CO-2	Discuss relation between various types of transforms
CO-3	Use the different transforms to solve the various types of problems
CO-4	Compare FIR filters with IIR filters
CO-5	Design and develop any digital filter
CO-6	Assess performance of various types of digital filters

#### Course-7

Course Code:	A1EPS303
Course Title:	MODERN CONTROL SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Identify suitable compensator and controllers to achieve desired specifications
CO-2	Predict the controllability and observability of the control system by using state space analysis
CO-3	Analyze Non-linear control systems
CO-4	Apply modern control techniques to assess system behavior
CO-5	Design state feedback controllers and state observe
CO-6	Assess the system stability by using Liapunov method

#### Course-8

Course Code:	A1EPS304
Course Title:	GENERATION & MEASUREMENTS OF HIGH VOLTAGES
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Select the HV equipment for a particular application
CO-2	Distinguish various types of HV measuring devices with respect to their application
CO-3	Appreciate the applications of HV generating and measuring devices
CO-4	Design and develop various HV generating and measuring equipment based on requirement

CO-5	Assess performance of various HV generating and measuring devices
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#### Course-9

Course Code:	A1EPS305
Course Title:	AI TECHNIQUES
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Understand the challenges and the usefulness of Artificial Intelligence with design a game playing program
CO-2	Appreciate the issues involved in knowledge bases, reasoning systems, and planning
CO-3	Understand the various learning methods and search algorithms
CO-4	Understand the potential and current research issues in Artificial Intelligence

#### Course-10

Course Code:	A1EPS306
Course Title:	POWER SYSTEM RESTRUCTURING & DEREGULATION
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Understand of operation of deregulated electricity market systems
CO-2	Typical issues in electricity markets
CO-3	To analyze various types of electricity market operational and control issues using new mathematical models

#### Course-11

Course Code:	A1PSL201
Course Title:	POWER SYSTEMS LABORATORY
Theory / Lab:	Lab
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Apply power system fundamentals to the design of a system that meet specific needs
CO-2	Design a power system solution based on the problem requirements and realistic Constraints
CO-3	Develop a major design experience in power a system that prepares them for engineering practice
CO-4	Interpret the experimental results and correlating them with the practical power system

## Semester-II Courses

#### Course-1

Course Code:	A1PST105
Course Title:	Power System Dynamics
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Acquire knowledge of various mathematical modelling techniques for formulating problems under normal and abnormal conditions
CO-2	Understand condition of the system subjecting to static, small signal and large signal dynamics
CO-3	Demonstrate various numerical methods to solve the formulated problems
CO-4	Illustrate the impact of specific condition of a power system network on its operation
CO-5	Plan proper protection systems, reactive power compensation elements, necessary changes in configurations
CO-6	Compare the response of network for new incorporations and justify the results

#### Course-2

Course Code:	A1PST106
Course Title:	FLEXIBLE AC TRANSMISSION SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Demonstrate knowledge and understanding of facts concepts and systems
CO-2	Analyze and design reactive power compensation systems
CO-3	Solve real and reactive power flow problems
CO-4	Evaluate the impact of flexible AC transmission systems of modern power systems

#### Course-3

Course Code:	A1PST107
Course Title:	POWER QUALITY
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Recognize various types of power quality problems, power quality standards defined by various committees
CO-2	Describe the events behind the transients and their classification & effects
CO-3	Distinguish between voltage & current harmonics and harmonics & transients

CO-4	Distinguish between short and long duration voltage variations
CO-5	Relate the Distribution generation(DG) and power quality

#### Course-4

Course Code:	A1PST108
Course Title:	SMART GRID
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Students will develop more understanding on the concepts of Smart Grid and its present developments
CO-2	Students will study about different Smart Grid technologies
CO-3	Students will acquire knowledge about different smart meters and advanced metering infrastructure
CO-4	Students will have knowledge on power quality management in Smart Grids
CO-5	Students will develop more understanding on LAN, WAN and Cloud Computing for Smart Grid applications

#### Course-5

Course Code:	A1PST207
Course Title:	DISTRIBUTION AUTOMATION
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Acquire knowledge on characteristics and components of electrical distribution system
CO-2	Understand how automation distribution system is done
CO-3	Demonstrate communication techniques, economic evaluation methods
CO-4	Illustrate the technical benefits of distribution system automation
CO-5	Develop the automation in a distribution network
CO-6	Appraise the distribution forecasting data and conclude future expansions

#### Course-6

Course Code:	A1PST208
Course Title:	Condition Monitoring of Power Apparatus
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Recall the necessity of condition monitoring and reliability and maintenance strategies
CO-2	Assess the condition of various electrical installation based on insulation status and various tests
CO-3	Implement the condition monitoring plan for rotating electrical machines and develop the preventive measures to be taken for any failure in machines
CO-4	Develop basic functional models for condition monitoring system to different kind of power apparatus
CO-5	Identify the cause of damage in the equipment with advanced tools and techniques of condition monitoring
CO-6	Analyse the vibration of rotating electrical machines

#### Course-7

Course Code:	A1PST209
Course Title:	ADVANCED POWER SYSTEM PROTECTION
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	To learn about various types of protective relays for power system
CO-2	To acquire an in-depth knowledge on the protection of transmission lines, generators and transformer
CO-3	To understand the concept of digital protection and computer relaying for power system

#### Course-8

Course Code:	A1PST210
Course Title:	POWER SYSTEM PLANNING & RELIABILITY
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Understanding some advanced concepts of power system reliability and planning that will be useful for engineering professional practice in the power sector operation and planning
CO-2	Forecast the long and short term demand
CO-3	Learn generation planning and reliability

#### Course-9

Course Code:	A1PST211
Course Title:	POWER SYSTEM TRANSIENTS
Theory / Lab:	Theory
L-T-P-C:	3 - 0 - 0 - 3
Course Outcomes:	
CO-1	Understand the phenomena of travelling waves in transients

CO-2	Understand the phenomena of switching transients
CO-3	Understand the voltage distribution in motors ,transformers and generator windings
CO-4	Acquire thorough knowledge of protection in lines ,stations, alternators and drive systems
CO-5	Get an overview of generation and measurement of AC and DC impulse voltages

#### Course-10

Course Code:	A1PST212
Course Title:	High Voltage Testing Techniques
Theory / Lab:	Theory
L-T-P-C:	4 - 0 - 0 - 4
Course Outcomes:	
CO-1	Able to understand the significance of various tests conducted on high voltage apparatus
CO-2	Able know the methods available for monitoring the health of insulation system
CO-3	Able to understand principles of design and operation of high-voltage testing equipment
CO-4	Able to apply knowledge and technical competence in a wide range of lightening and switching overvoltage protection in HV power station
CO-5	Able to implement methods of investigation of electrical withstand of gas, liquid and solid insulators and appropriate equipment and its measurement
CO-6	Able to elaborate, illustrate, interpret and compare obtained measurement or test results and draws appropriate conclusions

#### Course-11

Course Code:	A1PSL202
Course Title:	Simulation Laboratory
Theory / Lab:	Theory
L-T-P-C:	0 - 0 - 3 - 2
Course Outcomes:	
CO-1	Understand the mathematical model of Power system components
CO-2	Model various power system components using MATLAB/Simulink and PSCAD
CO-3	Model and understand the steady state, transient behaviour of power system components operated in real-time networks
CO-4	Improve the programming skills in solving Power system operation and control issues using MATLAB
CO-5	Appreciate the advantage of Power system simulation software's in reducing the human effort in terms of computation complexity and computation time
CO-6	Do projects involving the Power system simulation using MATLAB/Simulink and PSCAD

#### Course-12

Course Code:	
Course Title:	Research Methodologies
Theory / Lab:	
L-T-P-C:	
Course Outcomes:	
CO-1	Carry out Literature Survey
CO-2	Identify appropriate topics for research work in core domain
CO-3	Select and define appropriate research problem and parameters
CO-4	Design the use of major experimental methods for research
CO-5	Use appropriate tools, techniques, and processes of doing research in core domain
CO-6	Demonstrate own contribution to the body of knowledge
CO-7	Become aware of the ethics in research, academic integrity and plagiarism
CO-8	Write a research report and thesis

# Dept. of Mechanical Engg

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

**Course ou** Course outcomes (Cos) of all courses of all programs offered by the institution

**I B.Tech. (Mechanical Engg)**

**Semester-I Courses**

Course-1	
Course Code:	A1MAT001
Course Title:	Engineering Mathematics – I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students will be able to apply the knowledge of solving 1st order & 1st degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems
CO-2	Student will be able to find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Students will be able to apply the concepts of Maxima and Minima for finding extreme values
CO-4	Student will be able to formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation.

Course-2	
Course Code:	A1PYT001
Course Title:	Engineering Physics
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to understand the phenomena of interference, diffraction and polarization exhibited by light waves and the characteristics of lasers with an example and its application in specific to optic fiber.
CO-2	The student shall understand about different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-Ray diffraction.
CO-3	Student shall understand about response of the materials in presence of electric and magnetic fields.
CO-4	Student will gain knowledge on the basic laws of thermodynamics, work done, thermodynamic processes and entropy
CO-5	Student will be able to understand the system of forces (non equilibrium) and different types frictions.

Course-3	
Course Code:	A1CIT001
Course Title:	Computer Programming
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	have the ability to write a formal algorithmic solution for the given problem & explain the features of C like types including scalar & vector types, operators, expressions, expression evaluation, operator precedence, sequential, conditional & iterative constructs.
CO-2	have the ability to use modular programming constructs of C while appreciating different ways of exchanging inputs and outputs among modules and different memory allocation strategies in C.
CO-3	have the ability to define & use user defined data types using C constructs and write C programs that handles files.
CO-4	grasp the significance of primary constructs & methodology of procedural language C and appreciate the orthogonality of the same in writing reasonably complicated programs
CO-5	grasp the significance of type extendibility in C, need for address as a data type and library functions for dealing with files in writing more complicated programs.
CO-6	Fully appreciate the art of procedural programming in C and develop programs optimally using the full feature set of C language

Course-4	
Course Code:	A1MED001
Course Title:	Engineering Drawing

Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids
CO-3	Student will be able to produce isometric projection from orthographic projections & vice-versa

#### Course-5

Course Code:	A1CHT001
Course Title:	Environmental Studies
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will have knowledge on the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
CO-2	Student will have knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to the biodiversity, and conservation practices to protect the biodiversity
CO-3	Student will have knowledge on various attributes of the pollution and their impact and measures to reduce or control the pollution along with the waste management practices
CO-4	Student will have knowledge on social issues both rural and urban environment and the possible means to combat the challenges
CO-5	Student will have knowledge on the environment legislations of India and the first global initiatives towards the sustainable development, environmental assessment and the stages involved in EIA and the environment audit

#### Course-6

Course Code:	A1EHL001
Course Title:	English Language Practice-I
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student shall have the ability understand the synthetical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/her professional requirement
CO-5	Student shall be able to speak in English well
CO-6	Student shall be able to understand and analyse the core components of his study well

#### Course-7

Course Code:	A1PYL001
Course Title:	Engineering Physics Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to experimentally observe interference and diffraction patterns of light waves due to different optical devices and to determine the numerical aperture and bending loss of the optic fiber
CO-2	Student shall experimentally study the magnetic hysteresis and determine related parameters and study the variation of magnetic fields due to currents using tangent law.
CO-3	Student will be able to determine the specific heat and coefficient of thermal conductivity for the given materials.
CO-4	Student will be able to determine the resultant of the system of forces and coefficient of friction.

#### Course-8

Course Code:	A1CIL001
Course Title:	Computer Programming Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Have the ability to pick and choose the required built in data types for the specific problem and utilize the full power of operators and expression evaluation in C language while writing programs for any given problem
CO-2	Have the ability to use choose and utilize different control constructs in C language depending on the context of the need while developing a C program for any specific problem
CO-3	Have the ability to divide the parts of a program solution in to functions and write a program in C as an inter-play of functions using each other in what is called modular programming
CO-4	Have the ability to fully appreciate the concept and utilization of a single and multi-dimensional arrays of different data types in C

CO-5	Have the ability to appreciate the concept of address variables and understand the benefits and utilisations of the same along with under the flexibility provided by dynamic memory allocation and its comparison to static memory allocation
CO-6	Have the ability to appreciate the concept of user defined data types and utilize these concepts to define new composite data types required for implementing solutions to a problem in a C program

### Semester-II Courses

#### Course-1

Course Code:	A1MAT002
Course Title:	Mathematical Methods
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation
CO-4	Student will be able to solve Initial value problems through numerical methods.
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems.
CO-6	

#### Course-2

Course Code:	A1CYT001
Course Title:	Engineering Chemistry
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students gain the knowledge about water used in industries (boilers etc) and for drinking purpose, difference between hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis
CO-2	Students gain the knowledge of galvanic cells, concentration cells, applications of ion selective electrodes, Conductometry and Potentiometry to understand the principle and applications of electrochemistry. Topics on electrochemical cells, batteries and fuel cells make students understand the alternate sources of energy and also help them to tackle problems of corrosion and control.
CO-3	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection.
CO-4	Students gain the knowledge on structure, synthesis properties and applications of polymers, additives to be mixed with polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and biodegradable polymers, fibre reinforced plastics and bullet proof plastics, synthetic plastics that are essential to latest technology.
CO-5	Student gain the knowledge on the determination of calorific value by bomb calorimeter, the proximate and ultimate analysis of coal, Fractional distillation of crude, followed by catalytic cracking to obtain the liquid fuels for the functioning of internal combustion engine, octane and cetane number, which have large focus on oil industry
CO-6	Students gain knowledge on advanced materials like carbon nano tubes and fullerenes, their properties and applications, manufacturing of cement, need for green chemistry, principles of green chemistry solar cells and greenhouse effect and their importance.

#### Course-3

Course Code:	A1EET001
Course Title:	Basic Electrical & Electronics Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	The students will be able to analyze various types of electrical circuits
CO-2	The students will have ability to identify suitable machine for a particular application
CO-3	The students will have the ability to explain the working principle of different types of semiconductor devices
CO-4	The students will have the ability to explain the concepts of Communication Systems

#### Course-4

Course Code:	A1MET001
Course Title:	Engineering Mechanics
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	

CO-1	Students will be able to draw free body diagrams for different systems of forces which are balanced and apply equations of equilibrium to know the distribution of forces with and without consideration of friction.
CO-2	Students will be able find moments of inertia of any Area/Volume with definable boundaries and mass moments of inertia of bodies with definable volumes.
CO-3	Students will be able to find the displacement, velocity and accelerations of bodies subjected to unbalanced system of forces.
CO-4	Students will be able to solve the problems of dynamics by alternative methods like work energy method, impulse momentum equation etc.

#### Course-5

Course Code:	A1MAT104
Course Title:	Engineering Mathematics - II
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to solve boundary value problems using Fourier series and Fourier transforms.
CO-2	Student will be able to find the lengths ,surface area of revolution and volume of revolution for various curves.
CO-3	Student will be able to understand the physical significance of vector operators.
CO-4	Student will be able to apply vector integral theorems to evaluate Line, Surface and Volume integrals with ease.

#### Course-6

Course Code:	A1EHL002
Course Title:	English Language Practice – II
Theory / Lab:	Lab
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly
CO-3	Student shall be able to participate well in debates and discussions
CO-4	Student shall be able to write both Technical and General reports well
CO-5	Student shall be able prepare resume well and face the interviews confidently
CO-6	Student shall communicate confidently and effectively

#### Course-7

Course Code:	A1CYL001
Course Title:	Engineering Chemistry Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain knowledge on the method of determination of acid/base, total hardness, iron and zinc contents in the sample solution.
CO-2	Students will gain knowledge on the principles of conductometric, potentiometric, pH metric and colorimetric methods of determination.
CO-3	Students will understand in construction of galvanic cell, determination of calorific value, and preparation of biodiesel.

#### Course-8

Course Code:	A1MEW001
Course Title:	Basic Engineering Workshop
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Will be aware of the basic engineering trades and be able to execute related work at a rudimentary level
CO-2	Will be able to select and use proper tools for the different tasks
CO-3	Will be able to apply knowledge and skills developed to handle real-life situations in these areas

### Semester-III Courses

#### Course-1

Course Code:	A1MET201
Course Title:	Metallurgy and Material Science
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student can distinguish between different kinds of materials and classify them according their applications

CO-2	Enable to take adequate decision about heat treatment.
CO-3	Latest techniques of heat treatment applicable for non ferrous alloys.
CO-4	Different processing techniques involved in modern materials.

Course-2	
Course Code:	A1MET202
Course Title:	Engineering Thermodynamics
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Identify open and closed systems and analyze related problems
CO-2	Understanding the concepts such as work interaction, heat transfer and laws of thermodynamics
CO-3	Demonstrate the importance of P-V, T-S and H-S diagrams.
CO-4	Analyze the performance of gas and vapor power cycles and identify methods to improve thermodynamic performance

Course-3	
Course Code:	A1MET203
Course Title:	Mechanics of Materials
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Design structural members given the dimensions, material properties such as force-displacement relationships, boundary conditions, loading, allowable stresses, and factor of safety
CO-2	Determine the bending, compressive, tensile strength, torsional strength of the Material.
CO-3	Draw the shear force and bending moment diagrams for various beams under different loading conditions, selection of beam for a given application
CO-4	Determine the stresses developed in thin and thick cylinders for given pressure (internally or externally)
CO-5	Determine the deflections of beams under various loading conditions (Double integration and Macaulay's methods)

Course-4	
Course Code:	A1MET204
Course Title:	Fluid Mechanics and Hydraulic Machines and Systems
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Identify the type of fluid flow and know the different properties of fluids along with the units.
CO-2	Formulate the principles of conservations of mass, momentum, and energy as applied to a variety of internal and external flows. ii. Formulate the principles of conservations of mass, momentum, and energy as applied to a variety of internal and external flows.
CO-3	Evaluate the performance characteristics of pumps and turbines

Course-5	
Course Code:	A1MEST001
Course Title:	Managerial Economics and Financial Analysis
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	An ability to apply the knowledge of managerial and economic concepts.
CO-2	An ability to design a system according to the resources availability to meet the organizational needs.
CO-3	An ability to use the techniques and skills and methods of management to resolve the issues at organizational levels as well as at global level
CO-4	An ability to identify managerial problems with optimum solutions.
CO-5	An Ability to apply the tools and techniques.
CO-6	An ability to design a system according to the resources availability to meet the organizational needs.
CO-7	Helps, in preparation of the financial-statements in accordance with the Generally Accepted Accounting Principles

Course-6	
Course Code:	A1MEL201
Course Title:	Material Testing Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Evaluate Young Modulus, torsional strength, hardness and tensile strength of given specimens

CO-2	Determine the strength of coarse aggregates
CO-3	Find the compressive strength of concrete cubes and bricks
CO-4	Find stiffness of open coiled and closed coiled springs
CO-5	Determine the wear characteristics of ferrous, non-ferrous and composite materials for different parameters

Course-7	
Course Code:	AIEEL211
Course Title:	Basic Electrical and Electronics Engineering Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to select suitable motor for a particular application.
CO-2	Student will be able to design and analyse the performance of dc and ac machines.
CO-3	Will be able to select a suitable device for a required application
CO-4	Will be able to determine different parameters and different ranges of operation.
CO-5	Will be able to design and analyze the performance of a rectifier for a required application.

Course-8	
Course Code:	A1MEL203
Course Title:	Computer Aided Engineering Drawing Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	The student can clearly differentiate different types of projections
CO-2	Skills of freehand sketching to aid in the visualization process and to efficiently communicate ideas graphically will be developed.
CO-3	The student can solve problems related to orthographic projections, sections of solids, development of surfaces etc.
CO-4	The student is able to draw 2D and 3D drawings of an object using software
CO-5	The student can discuss knowledgeably concepts of Solid Modeling and Design
CO-6	The student can represent Dimensions for 2D and 3D drawings

#### Semester-IV Courses

Course-1	
Course Code:	AIMAT109
Course Title:	Probability and Statistics
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students will be able to apply probabilistic tools to study systems with random components in many areas of communication networks, electro physics and computers
CO-2	Students will be able to find the probabilities using discrete and continuous distributions
CO-3	Students will be able to predict and control the numerical and time series data occurs in industry and scheduling
CO-4	Student will able to evaluate the performance measures of the systems in networks, transportation systems, production lines with statistical methods of Regression and SQC.

Course-2	
Course Code:	A1MET205
Course Title:	Kinematics of Machinery
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	The students will be able to identify and differentiate different types of pairs and their usage in different types of mechanisms in achieving a desired motion
CO-2	The students will be able to enunciate concepts behind mechanisms which produce straight line motion, steering mechanisms and universal joint
CO-3	The students will be able to draw velocity and acceleration diagrams of various mechanisms.
CO-4	The students will be able to enunciate different types of cam and followers, their design and practical application.
CO-5	The students will be able to enunciate different types of gears, their terminology and practical application

Course-3	
Course Code:	A1MET206
Course Title:	IC Engines and Compressors

Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	The Students will be able to describe the operating principles of SI and CI engines
CO-2	The students will be able to Differentiate and analyze the Air- Standard, Fuel Air and Actual Cycles
CO-3	The students will be able to Explain about normal combustion and abnormal combustion of IC engine
CO-4	The students will be able to Estimate Engine performance characteristics and prepare heat balance sheet for IC engine.
CO-5	The students will be able to Calculate and analyze the performance of reciprocating compressor
CO-6	The students will be able to Explain and Differentiate between axial and centrifugal compressors

#### Course-4

Course Code:	A1MED207
Course Title:	Machine Drawing
Theory / Lab:	Theory
L-T-P-C:	2-0-4-4
Course Outcomes:	
CO-1	Students are able to identify the conventional representation of different materials and can prepare the sectional views of different components.
CO-2	Students are capable of identify different types of tolerances, fits and surface roughness and can prepare production drawings of different components like connecting rod, stuffing box etc.,
CO-3	Students can differentiate temporary and permanent fasteners, and can prepare drawings of screwed, riveted joints, pipe joints and bearings.
CO-4	Students have proficiency to prepare assembly drawings of different machine components

#### Course-5

Course Code:	A1MET208
Course Title:	Manufacturing Processes
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Classify products simply in terms of their basic shape.
CO-2	Describe the difference between the hot and cold working of metals and give the advantages of each.
CO-3	Indicate which types of manufacturing process are suited to producing different shapes of product.
CO-4	Indicate which processes are likely to be used for producing a particular product using a specific material or class of material.
CO-5	Student able to know about different welding techniques for joining of different materials and can judge the type of welding to be done.
CO-6	Outline the concept of surface engineering for improving the properties of a component.

#### Course-6

Course Code:	A1MET209
Course Title:	Industrial Engineering and Management
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the role of human relations in the management of operations
CO-2	Can apply the tools of operations and project management
CO-3	Apply fundamental management science to technical problem solving
CO-4	Do analysis of projects, operations and firms by having depth in knowledge

#### Course-7

Course Code:	A1MEL204
Course Title:	Fluid Mechanics and Hydraulic Machines Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Conduct experiments and analyze the performance characteristics of pumps and turbines
CO-2	Distinguish different flow measuring devices and its applications
CO-3	Estimate major and minor losses in different types of pipe fittings

#### Course-8

Course Code:	A1MEL205
Course Title:	Production / Metallurgy Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	

CO-1	Must be capable of selecting suitable pattern as per the component and follow necessary steps to prepare a mould cavity.
CO-2	Must be in a position to select type of welded joint and fabrication method for desired application keeping abreast with internal soundness
CO-3	Can select suitable sheet metal operations required for completion of a specific product and also design suitable die layout.
CO-4	To prepare failure analysis report.

#### Semester-V Courses

Course-1	
Course Code:	A1MET210
Course Title:	Dynamics of Machinery
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	analyze screw jack, bearings, brakes, dynamometers and clutches
CO-2	analyze governors and flywheels
CO-3	do static and dynamic balancing of rotating and reciprocating mass systems
CO-4	prepare physical and mathematical models of mechanical systems for vibration analysis
CO-5	apply gyroscopic principle to aero plane, ships, motor car, and motor cycle

Course-2	
Course Code:	A1MET211
Course Title:	Design of Machine Members – I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Apply design procedure to engineering problems, including the consideration of technical and manufacturing constraints.
CO-2	Select suitable material in design applications.
CO-3	Design permanent joints like riveted and welded joints.
CO-4	Design the machine member like fasteners, shafts, shaft couplings and springs subjected to static and dynamic loads.

Course-3	
Course Code:	A1MET212
Course Title:	Computer Aided Design
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Understand the applications of computer for geometric modeling and analysis
CO-2	Understand CAD process and also interaction with other tools via neutral file formats
CO-3	Use mathematical representation techniques behind the generation of 2D curves and transformations imposed over models in CAD tools
CO-4	Use mathematical representation techniques behind the generation of surface entities in CAD tools
CO-5	Use representation techniques behind the generation of 3D solids in CAD tools
CO-6	Understand the concept of FEM and analysis involved for analyzing field problems as a part of CAD process

Course-4	
Course Code:	A1MET213
Course Title:	Machining Processes
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Evaluate performance of a tool in terms of forces generated and life
CO-2	Describe the operation of any conventional machine tool and explain the design rationale behind it
CO-3	Identify and describe a wide range of tools available in the industry and select suitable tools for a specific machining setup
CO-4	Select appropriate work holding systems for a given requirement and describe the design rationale behind it
CO-5	Select the appropriate machining parameters depending upon the workpiece and operating constraints
CO-6	Describe the functioning of CNC machines currently used in industry, define the operating method for a given job and elucidate the design approach for critical CNC machine modules

#### Course-5

Course Code:	A1MET214
Course Title:	Steam and Gas Turbines
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Get an insight of various components of steam power plant
CO-2	Able to demonstrate the working of HP & LP boilers and its accessories
CO-3	Solve problems on steam nozzles and able to calculate the size of nozzle.
CO-4	Get an insight of various components and principles of steam turbines
CO-5	Able to understand the function of steam condenser and its limitations
CO-6	Able to explain the working principles and performance improvement methods of gas turbines

<b>Course-6</b>	
Course Code:	A1MET301
Course Title:	Automobile Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify automobile components and select the automobiles for different applications
CO-2	Select the appropriate fuel supply, cooling systems for a particular field of automobile
CO-3	Distinguish between different electrical systems & transmission systems
CO-4	Identify the different suspension systems and braking systems for different automobiles
CO-5	Able to understand national and international standards of emissions and their control
CO-6	Select the and safety measures for automobiles

<b>Course-7</b>	
Course Code:	A1MET305
Course Title:	Alternate Sources of Energy
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	students will be able to know the different methods of measurement and collection of solar radiation
CO-2	students will be understand the methods of storage of solar energy and applications
CO-3	students will be select sites for wind farm and working of different types of wind generators.
CO-4	students will be demonstrate different biomass energy conversion technologies.
CO-5	students will be understand the working of OTEC and TIDAL power plants
CO-6	students will be understand the concepts and applications of fuel cells, thermoelectric convertor and MHD generator.

<b>Course-8</b>	
Course Code:	A1MET306
Course Title:	Advanced Mechanics of Materials
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Formulate mathematical relations for members under various loading.
CO-2	Analyze failure methodology of irregular sections.
CO-3	Analyze members failed under various loading using experimental data.
CO-4	Apply the knowledge of contact stress applications in various mechanical applications.

<b>Course-9</b>	
Course Code:	A1MET307
Course Title:	Non Destructive Testing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Importance of different non-destructive techniques and underlying principles
CO-2	Different NDT and NDE principles used in industries
CO-3	Need for ND testing over conventional techniques
CO-4	NDE techniques in Welding to find the no. of defects

<b>Course-10</b>	
Course Code:	A1MEL206
Course Title:	Thermal Engineering Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	The Students will be able to Draw the valve timing and port timing diagrams of IC engines and analyze the deviations from the ideal diagrams

CO-2	The students will be able to Conduct the experiments on various IC engines and calculate brake power, brake thermal efficiency and brake specific fuel consumption
CO-3	The students will be able to Prepare heat balance sheet and analyze how the heat is distributed to various components
CO-4	The students will be able to Analyze the performance of two stage reciprocating air compressor
CO-5	The students will be able to Calculate friction power of engine using Morse, Motoring test, retardation test and Willian's line methods
CO-6	The students will be able to Explain the functioning of different components of the boiler

### Semester-VI Courses

#### Course-1

Course Code:	A1MET215
Course Title:	Heat Transfer
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Compute temperature distribution and heat transfer rate in one dimensional steady heat conduction with and without heat generation
CO-2	Analyse heat transfer through fins and transient heat conduction problems.
CO-3	Interpret and analyse forced and free convective heat transfer in different engineering applications.
CO-4	Describe the heat transfer mechanism of boiling and condensation.
CO-5	Design heat exchangers using LMTD and NTU methods.
CO-6	Formulate and analyse radiation heat exchange between two surfaces.

#### Course-2

Course Code:	A1MET216
Course Title:	Design of Machine Members-II
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Able to design curved beams such as crane hooks, machine frames and C- clamps.
CO-2	Able to design power transmission elements such as gears, belts, chains, pulleys and ropes.
CO-3	Able to select the suitable bearing based on the application of the loads and predict the life of the bearing.
CO-4	Able to design engine parts such as cylinder, piston, connecting rod, crank shaft and gearbox.

#### Course-3

Course Code:	A1MET217
Course Title:	Manufacturing Systems
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	identify the various elements and their activities in the Computer Integrated Manufacturing Systems
CO-2	explain the concepts of GT for the product development.
CO-3	to relate concepts such as 'Just in Time manufacturing' and 'Lean manufacturing'
CO-4	apply Lean and Agile manufacturing management and technological approaches in modern manufacturing systems

#### Course-4

Course Code:	A1MET310
Course Title:	Robotics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	identify components and classification of robot
CO-2	capable of performing transformation in developing forward and inverse kinematic and dynamic problems
CO-3	select actuators and sensors for different robot applications
CO-4	design work cell and select robots for applications

#### Course-5

Course Code:	A1MET311
Course Title:	Advanced Machining Processes
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	

CO-1	Students will be having a proper understanding on basic concepts and difference between conventional and unconventional machining process
CO-2	Gains domain knowledge on Abrasive and water jet machining Methods and their implementation in respective industry.
CO-3	Understand the application of electro chemical machining and their principles in practice.
CO-4	Understand the practical aspects of the industry by using the Electro discharge machining and their , and its principles
CO-5	Estimate the material removal rate and cutting force, in an industrially useful manner, for practical machining processes like electro beam and laser beam machining process.
CO-6	Gains the domain knowledge on use of plasma machining in various industries and its influence on cost

#### Course-6

Course Code:	A1MET312
Course Title:	Industrial Safety
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	student should be able to learn about basics of safety management.
CO-2	student should be able to demonstrate safe operational procedures in industries.
CO-3	student should be able To be able to identify the occupational related health issues.
CO-4	student should be able to be able to identify the safe operating conditions.
CO-5	student should be able to be able to explain about different Factory regulations.
CO-6	student should be able to be able to apply different firefighting methods

#### Course-7

Course Code:	A1MET313
Course Title:	Refrigeration and Air Conditioning
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	student should be able to understand the need of Air refrigeration and its applications
CO-2	student should be able to demonstrate the working of vapor compression refrigeration system
CO-3	student should be able to identify and explain the components of refrigerating systems and refrigerants
CO-4	student should be able to demonstrate the working of vapor absorption refrigerating system
CO-5	student should be able to sketch different Psychrometric Processes on psychrometric chart
CO-6	student should be able to explain the difference between summer, winter and year-round air conditioning systems

#### Course-8

Course Code:	A1MET314
Course Title:	Finite Element Methods
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	student will be able to prepare a finite element model and apply proper boundary conditions for solving various problems in engineering field
CO-2	student will be able to solve one dimensional problems using FEM
CO-3	students will be able to solve two dimensional problems and axisymmetric problems using CST and LST element
CO-4	student will able to perform thermal and dynamic analysis using 1-D and 2-D elements

#### Course-9

Course Code:	A1CET402
Course Title:	Air Pollution and Control
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	student should be able to decide the ambient air quality based on the analysis of air pollutants
CO-2	student should be able to judge the plume behaviour in a prevailing environmental condition
CO-3	student should be able to design particulate and gaseous control measures for an industry
CO-4	student should be able to apply the concept of ambient air quality in maintaining the air pollutant levels in the atmosphere

#### Course-10

Course Code:	A1CHT401
Course Title:	Non-Conventional Sources of Energy
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3

<b>Course Outcomes:</b>	
CO-1	should be able to explain the working of solar collectors and various applications
CO-2	should be able to explain different types of wind mills for power generation and the biomass sources
CO-3	should be able to explain the generating of power from geothermal energy and ocean energy.
CO-4	should be able to explain about different direct energy conversion devices.

#### Course-11

Course Code:	A1EET403
Course Title:	MATLab
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	student should be able to design a physical system
CO-2	student should be able to change a physical system as per requirement
CO-3	student should be able to experiment a physical system

#### Course-12

Course Code:	A1MEL207
Course Title:	Machine Tools and Metrology Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	identify attend of course student is able to identify and select suitable cutting tools and tool material as per requirement for specific machining
CO-2	sequence of operations or process plan required for accomplishing a specific work
CO-3	select suitable machines for accomplishment of specific task
CO-4	select suitable accessories and attachment
CO-5	understand the importance of calibration of measuring instrument while machining

#### Course-13

Course Code:	A1MEL208
Course Title:	CAD/CAE Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	generate 3D model from engineering drawings by using any 3D modelling CAD tool
CO-2	assemble number of 3D CAD parts as per the assembly drawing
CO-3	perform structural analysis by identifying appropriate elements, meshing and other tasks using FEA tool
CO-4	perform Thermal analysis by identifying appropriate elements, meshing and other tasks using FEA tool
CO-5	perform coupled field analysis by identifying appropriate elements, meshing and other tasks using FEA tool

### Semester-VII Courses

#### Course-1

Course Code:	A1MET218
Course Title:	Operations Research
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
<b>Course Outcomes:</b>	
CO-1	Students must be able to understand different OR models, linear programming techniques and application of those techniques for business and industrial problems.
CO-2	Students must be able to understand different allocation methods like Transportation, Assignment and Replacement methods. Apply those techniques to the real life problems.
CO-3	Students must be able to understand different replacement techniques and apply those techniques for the replacement of items and different machine components in the industry.
CO-4	Students must be able to understand waiting line theory in relation with working process distribution, inventories and order back losses.
CO-5	Students must be able to understand different inventory models like uniform demand, non-uniform demand with finite and infinite production rates and to apply for real life problems.
CO-6	Students must be able to understand different simulation models and dynamic programming models for inventory, queuing problems, etc.,

#### Course-2

Course Code:	A1MET317
Course Title:	Power Plant Engineering
Theory / Lab:	Theory

L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to understand the layout and functioning of steam power plant
CO-2	Understand the working of Diesel and Gas turbine power plant.
CO-3	Able to explain the working principle of different types of Hydro electric power plant.
CO-4	Able to understand the working of Nuclear power generation and different types of reactors.
CO-5	Able to explain the working of various non-conventional power generations.
CO-6	Able to understand the economics of power generation and distribution

#### Course-3

Course Code:	A1MET318
Course Title:	Mechanical Vibrations and Condition Monitoring
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	analyze any single degree of freedom systems.
CO-2	analyze any multi degree freedom systems.
CO-3	analyze any multi degree of freedom systems using numerical methods.
CO-4	understand the reasons for selecting particular maintenance strategies
CO-5	understand the effective methodologies for implementing Condition Monitoring Techniques.
CO-6	identify the optimum maintenance strategy for different types of equipment

#### Course-4

Course Code:	A1MET319
Course Title:	Automation in Manufacturing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students will be able to identify the various elements of manufacturing automation
CO-2	Students will be able to analyze the performance of automated transfer and assembly lines
CO-3	Students will be able to demonstrate understanding of different handling and storage systems
CO-4	Students will be able to demonstrate understanding of different automation support systems and their applications

#### Course-5

Course Code:	A1MET320
Course Title:	Production Planning and Control
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Describe the way of integrating different departments to execute PPC functions
CO-2	To make forecasts in the manufacturing and service sectors using selected quantitative and qualitative techniques
CO-3	Understand importance and function of inventory systems in the industries.
CO-4	Optimize their plans in and around with the perfect planning and control on their objectives.
CO-5	Acquire abilities and capabilities in the areas of advanced manufacturing methods, quality assurance and shop floor management
CO-6	Design and validate technological solutions to defined problems

#### Course-6

Course Code:	A1MET321
Course Title:	Computational Fluid Dynamics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand CFD methods and its applications.
CO-2	Develop mathematical formulations for fluid flow.
CO-3	Apply different discretization techniques for fluid flow and heat transfer
CO-4	Solve various PDE using different numerical methods
CO-5	Apply CFD to incompressible flows.
CO-6	Acquire skills to implement FVM for fluid flow and heat transfer.

#### Course-7

Course Code:	A1MET322
Course Title:	Creep, Fatigue And Fracture Mechanics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	students can understand the importance of dislocations and their on physical properties of materials.

CO-2	This course will facilitate to understand the importance of creep, fatigue, impact and their combined action in analyzing engineering problems /failures.
CO-3	Able to learn how to engineer the material properties to meet certain specifications.
CO-4	Able to prepare a report on failure analysis of engineering components and also become the platform for material selection.

#### Course-8

Course Code:	A1MET323
Course Title:	Product Lifecycle Management
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Describe the product design process
CO-2	Identify and illustrate the role of PLM in enhancing productivity
CO-3	Describe the implementation of PLM
CO-4	Execute PLM implementation at a basic level

#### Course-9

Course Code:	A1MET325
Course Title:	Engineering in Motion
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Ability to explain the principles of different locomotives and the parameters influence their design and performance.
CO-2	Ability to demonstrate the thermodynamic principles, components and circuits used in aircrafts.
CO-3	Ability to design different propulsive systems and find out the performance of jet propulsive systems
CO-4	Ability to evaluate the fluid circuits and cryogenic engines for their performance
CO-5	Ability to apply the principles of rocket propulsion and differentiate the jet propulsion and rocket propulsion.
CO-6	Ability to understand the basics, fluid circuits, components of the ship and their working principles

#### Course-10

Course Code:	A1MET327
Course Title:	Surface Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Demonstrate a sound knowledge for the systematic application of alternative technologies used to fabricate coating systems
CO-2	Analyze complex service failure problems and determine the correct surface engineering solution
CO-3	Demonstrate knowledge of why the surface treatment affects the bulk properties of the material.
CO-4	Select the most suitable surface engineering techniques that would give the required properties

#### Course-11

Course Title:	A1MET329
Course Title:	Waste Heat Recovery and Co-Generation
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to understand the need of waste heat recovery
CO-2	Able to explain various waste heat recovery systems
CO-3	Able to design waste heat boiler
CO-4	Able to demonstrate the working of combined cycle power plant
CO-5	Able to state different applications of co-generation
CO-6	Able to understand the importance of financial and environmental considerations in co-generation systems.

#### Course-12

Course Title:	A1MET330
Course Title:	Introduction to Nanotechnology
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify the significance of nano materials
CO-2	Know various methods that synthesize nano materials
CO-3	Use various characterization techniques and properties of nano materials
CO-4	Use of carbon based nanomaterials for various industrial applications
CO-5	Design and demonstrate MEMS / NEMS devices for various applications

#### Course-13

Course Title:	A1MET331
Course Title:	Material Characterization Techniques
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understanding the importance of different characterization techniques and underlying principles
CO-2	Importance of structure-property correlation in deciding the performance of a material for particular application
CO-3	Evaluating the thermodynamic properties of a material by characterization facilities like thermal analysis and gravimetric analysis
CO-4	Understanding the material's structure at different levels of magnification by characterization facilities like LM, SEM etc

#### Course-14

Course Code:	A1MET332
Course Title:	Instrumentation and Metrology
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Apply the fundamental principles of measurements and instrumentation methodology to solve practical problems related to experimental measurement and data analysis.
CO-2	Demonstrate the working principles of various instruments and calibration methods
CO-3	Able to analyze the working of an instrument and error analysis
CO-4	Ability to design the limit gauges.
CO-5	To understand the need of optical measuring instruments and operating the instruments.
CO-6	Understand the terminology and symbols pertaining to surface texture measurement.

#### Course-15

Course Code:	A1CET401
Course Title:	Road Safety Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	able to identify different types of road accidents and causes
CO-2	know the road transport policies to prevent accidents
CO-3	able to conduct road safety audits
CO-4	able to evaluate accident hotspots and recommend corrective measures

#### Course-16

Course Code:	A1EET404
Course Title:	Electrical Wiring, Estimation & Costing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	able to understand various types of materials required for wiring
CO-2	prepare an estimate of quantity and cost of the material for a electrical project
CO-3	able to prepare detail estimate and costing of Residential, Industrial and commercial Electrical Installations following IE Act-2003
CO-4	able to prepare estimates for repairs and maintenance of electrical devices and equipment
CO-5	Know importance of earthing and selection of earthing

#### Course-17

Course Code:	A1MEL209
Course Title:	Heat Transfer Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Demonstrate the fundamental principles of heat transfer in practice.
CO-2	Design and test practical heat transfer systems like heat exchangers, condensers, evaporators
CO-3	Develop empirical correlations for predicting heat rates for a given system
CO-4	Apply the concepts of heat transfer for measuring various material properties
CO-5	Use different empirical correlations for predicting heat transfer coefficient
CO-6	Analyze temperature distribution in different heat transfer systems

#### Course-18

Course Code:	A1MEL210
Course Title:	Robotics and CNC Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	

CO-1	Calibrate sensors, acquire data; analyze using software & integrate.
CO-2	Interface sensors with microprocessors and Mechatronics subsystems using PLC.
CO-3	Program & operate 6 axis robo arm
CO-4	Troubleshoot, operate CNC right starting from CAD part programming.

#### Semester-VIII Courses

Course-1	
Course Code:	A1MEP601
Course Title:	Directed Study & Major Project
Theory / Lab:	Project
L-T-P-C:	0-0-0-10
Course Outcomes:	
CO-1	Identify, formulate, research literature and define an engineering problem
CO-2	Identify the pre requisites to find solution for the engineering problem defined and acquire the required knowledge and skills
CO-3	Constitute and work in multidisciplinary teams to synthesize the ideas
CO-4	Design and develop effective and ethical solutions for engineering problems for the society by keeping in view the human health and environmental issues
CO-5	Communicate/present solution for an engineering problem by means of effective reports and documentation
CO-6	Plan manage financial, infrastructural and human resources effectively and execute the project

#### M.Tech. (Product Design and Manufacturing)

#### Semester-I Courses

Course-1	
Course Code:	A1PDT101
Course Title:	Product Design
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Use the product life cycle and technology life cycle in development of new product
CO-2	Use the Product Design, as a means to manage the development of an idea from concept through to production
CO-3	Apply creative process techniques in synthesizing information, problem-solving and critical thinking.
CO-4	Select an appropriate product development approaches
CO-5	Know the principles, planning, technologies, types of rapid proto typing

Course-2	
Course Code:	A1PDT102
Course Title:	Computer Aided Design
Theory / Lab:	Theory
L-T-P-C:	3-1-0-4
Course Outcomes:	
CO-1	Understand the applications of computer for geometric modeling and analysis
CO-2	Understand CAD process and also interaction with other tools via neutral file formats
CO-3	Use mathematical representation techniques behind the generation of 2D curves and transformations imposed over models in CAD tools
CO-4	Use mathematical representation techniques behind the generation of surface entities in CAD tools
CO-5	Use representation techniques behind the generation of 3D solids in CAD tools
CO-6	Understand the concept of FEM and analysis involved for analyzing field problems as a part of CAD process

Course-3	
Course Code:	A1PDT103
Course Title:	Materials and Processes selection
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Identify the properties of various steels.
CO-2	Know the applications nano composites.
CO-3	Identify the materials used at various applications.
CO-4	Select the suitable materials using material property charts.
CO-5	Select the shape of the materials using material property charts.

Course-4	
Course Code:	A1PDT104

Course Title:	Advanced Manufacturing Technology
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Select suitable casting technique for given component to be manufactured.
CO-2	Classify various types of welding techniques, understand the requirements of sound weld and select suitable joining technique for given pieces for welding
CO-3	Understand the importance of sheet metal operations and economics of sheet metal parts and forming processes.
CO-4	Understand the need of micromachining and steps involved in it
CO-5	Understand the significance of powder metallurgy as unique methods for manufacturing composites and ceramics

<b>Course-5</b>	
Course Code:	A1PDT201
Course Title:	Project Management
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Manage the selection and initiation of individual projects and their portfolios
CO-2	Apply skills immediately to the efficiency of the business operation
CO-3	Develop a project scope considering factors like customer requirements and Internal/ External goals
CO-4	Describe a project life cycle and can skillfully map each stage of the cycle
CO-5	Able to demonstrate effective project execution and control techniques for successful projects

<b>Course-6</b>	
Course Code:	A1PDT206
Course Title:	Flexible manufacturing systems
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Select, Develop and implement Flexible Manufacturing system
CO-2	Analyze and design material handling and storage systems
CO-3	Select suitable modelling and control techniques
CO-4	Solve Scheduling problems occur in FMS systems
CO-5	Utilize different management techniques for FMS systems

<b>Course-7</b>	
Course Code:	A1PDL101
Course Title:	Advanced Manufacturing Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Demonstrate the various stages required for manufacturing a sound casting
CO-2	Understand the outfit of welding set up and steps involved in characterizing a sound weld.
CO-3	Identify various parts of dynamometer and successfully apply it for finding different forces during machining of a component.
CO-4	Develop comprehensive knowledge on die design by incorporating allowances
CO-5	Effectively use CAM software for product development

## Semester-II Courses

<b>Course-1</b>	
Course Code:	A1PDT105
Course Title:	Design for Manufacturing and Assembly
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the steps involved in DFMA and its advantages of applying DFMA during product design
CO-2	Select suitable material and shapes for a given component
CO-3	Understand different manufacturing processes and select suitable material and right technique for component to be produced
CO-4	Understand different types joints and select suitable joint for given application
CO-5	Analyze different modes of failure and steps involved in optimizing design

<b>Course-2</b>	
Course Code:	A1PDT106
Course Title:	Computer Aided Manufacturing

Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Demonstrate the various stages required for manufacturing a sound casting
CO-2	Understand the outfit of welding set up and steps involved in characterizing a sound weld.
CO-3	Identify various parts of dynamometer and successfully apply it for finding different forces during machining of a component.
CO-4	Develop comprehensive knowledge on die design by incorporating allowances
CO-5	Effectively use CAM software for product development

#### Course-3

Course Code:	A1PDT107
Course Title:	Digital Manufacturing
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the basic technologies needed for Digital Manufacturing
CO-2	Develop powder based technologies for physical model developments
CO-3	Develop Material jetting and sheet metal based technologies for physical model developments
CO-4	Develop tooling for digital manufacturing
CO-5	Define the range of technologies capable of translating virtual solid model data into physical models

#### Course-4

Course Code:	A1PDT108
Course Title:	Product life cycle management
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the concept of PLM and elements in it
CO-2	Distinguish the difference between product data and product workflow and effective usage of PLM Strategy
CO-3	Identify various phases of PLM and methods required for developing product
CO-4	Demonstrate the widely used PLM tools
CO-5	Recognize the components of product organizational structure and system components in lifecycle

#### Course-5

Course Code:	A1PDT208
Course Title:	Finite element analysis
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Prepare a finite element model and apply proper boundary conditions for solving various problems in engineering field.
CO-2	Formulate the higher order elements in 1D, 2D, 3D
CO-3	Solve the one dimensional structural problems
CO-4	Solve the two dimensional structural problems
CO-5	Solve heat conduction and fluid flow problems, Analyze the FEM model using finite element software.

#### Course-6

Course Code:	A1PDT210
Course Title:	Surface processing techniques
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Demonstrate a sound knowledge for the systematic application of alternative technologies used to fabricate coating systems
CO-2	Analyze complex service failure problems and determine the correct surface engineering solution
CO-3	Demonstrate knowledge of why the surface treatment affects the bulk properties of the material
CO-4	Select the most suitable surface engineering techniques that would give the required properties
CO-5	Demonstrate knowledge of plasma assisted surface treatments

#### Course-7

Course Code:	A1PDL102
Course Title:	CAE Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2

Course Outcomes:	
CO-1	Perform structural analysis by identifying appropriate elements, meshing and other tasks using FEA tool.
CO-2	Perform Thermal analysis by identifying appropriate elements, meshing and other tasks using FEA tool.
CO-3	Perform coupled field analysis by identifying appropriate elements, meshing and other tasks using FEA tool.
CO-4	Perform Fluid Flow analysis by identifying appropriate elements, meshing and other tasks using FEA tool.

### Semester-III Courses

<b>Course-1</b>	
Course Code:	A1PDT109
Course Title:	Research Methodologies
Theory / Lab:	Theory
L-T-P-C:	2-0-0-2
Course Outcomes:	
CO-1	Identify and present the role and importance of research in Engineering
CO-2	Identify and present the issues and concepts salient to the research process
CO-3	Identify and present the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project
CO-4	Identify and present the concepts and procedures of sampling, data collection, analysis and reporting

<b>Course-2</b>	
Course Code:	A1PDV401
Course Title:	Comprehensive Viva Voce
Theory / Lab:	Viva Voce
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Comprehend and present the knowledge acquired through the completion of specialized courses by oral interaction

<b>Course-3</b>	
Course Code:	A1PDR401
Course Title:	Self Study (Pre-Requisite)
Theory / Lab:	Theory/Tool
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Identify the pre requisites to find solution for the engineering problem defined and acquire the required knowledge and skills

<b>Course-4</b>	
Course Code:	A1PDS501
Course Title:	Seminar
Theory / Lab:	Seminar
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Identify and present the need & necessity of the cutting edge technologies
CO-2	Generate review reports on the cutting edge technologies

### Semester-IV Courses

<b>Course-1</b>	
Course Code:	A1PDP502
Course Title:	Project Phase-II
Theory / Lab:	Project
L-T-P-C:	0-0-0-16
Course Outcomes:	
CO-1	Identify, formulate, research literature and define an engineering problem
CO-2	Identify the pre requisites to find solution for the engineering problem defined and acquire the required knowledge and skills
CO-3	Constitute and work in multidisciplinary teams to synthesize the ideas
CO-4	Design and develop effective and ethical solutions for engineering problems for the society by keeping in view the human health and environmental issues
CO-5	Communicate/present solution for an engineering problem by means of effective reports and documentation
CO-6	Plan manage financial, infrastructural and human resources effectively and execute the project

# Dept. of ECE

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

## B.Tech. (ECE)

### Semester-I Courses

#### Course-1

Course Code:	A1MAT001
Course Title:	ENGINEERING MATHEMATICS-I
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will be able to apply the knowledge of solving 1st order & 1st degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems
CO-2	Student will be able to find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Students will be able to apply the concepts of Maxima and Minima for finding extreme values
CO-4	Student will be able to formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation

#### Course-2

Course Code:	A1PYT002
Course Title:	APPLIED PHYSICS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Student will be able to understand the phenomena of interference, diffraction and polarization exhibited by light waves.
CO-2	Student shall understand about laser, its characteristics and production with an example and application of laser in specific to optic fiber.
CO-3	The student shall understand about different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction
CO-4	Student will be able to understand foundation principles of quantum mechanics and semiconductors.
CO-5	Student shall understand about response of the materials in presence of electric and magnetic fields and the basic laws of electromagnetic waves.

#### Course-3

Course Code:	A1CET001
Course Title:	BASICS OF CIVIL & MECHANICAL ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Student will be able to understand floor area, plinth area, and building materials such as brick, cement, concrete, steel.
CO-2	Student will be able to understand the concepts of surveying, infrastructure such as buildings, roads, bridges, dams.
CO-3	Student will be able to understand the working and function of various components of systems and subsystems of I.C. Engines, turbines, pumps and refrigerating systems.
CO-4	Student will be able to identify various types of mechanical components suitable for power transmission
CO-5	Student will be able to understand Casting, forming and different metal joining processes like Welding, Brazing, Soldering

#### Course-4

Course Code:	A1ECT001
Course Title:	FUNDAMENTALS OF ELECTRONIC CIRCUITS AND DEVICES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	

CO-1	Students have the ability to develop and solve mathematical representations for simple RLC circuits.
CO-2	Students will be able to simplify various circuits using Mesh and Nodal Analysis.
CO-3	Students will understand the working principle of different types of semiconductor diodes.
CO-4	Students will be able to design and analyze various Rectifiers with and without filters.

#### Course-5

Course Code:	A1CHT001
Course Title:	ENVIRONMENTAL STUDIES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Student will have knowledge on the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
CO-2	Student will have knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
CO-3	Student will have knowledge on various attributes of the pollution and their impact and measures to reduce or control the pollution along with waste management practices
CO-4	Student will have knowledge on social issues both rural and urban environment and the possible means to combat the challenges
CO-5	Student will have knowledge on the environmental legislations of India and the first global initiatives towards sustainable development, environmental assessment and the stages involved in EIA and the environmental audit

#### Course-6

Course Code:	A1EHL001
Course Title:	ENGLISH LANGUAGE PRACTICE -I
Theory / Lab:	Lab
L-T-P-C:	Lab
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning.
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/her professional requirement
CO-5	Student shall be able to Speak in English well
CO-6	Student shall be able to understand and analyze the core components of his study well

#### Course-7

Course Code:	A1PYL002
Course Title:	APPLIED PHYSICS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Student will be able to experimentally observe interference and diffraction patterns of light waves due to different optical devices and determine the given parameters.
CO-2	Student shall understand the tir process in the optical fiber experimentally and will be able to determine the numerical aperture and bending loss of the optic fiber.
CO-3	Student shall experimentally determine the temperature coefficient of resistance, energy gap, type of charge carriers and concentration of charge carriers in a semiconductor and to study the I-V characteristics of the given p-n junction diode.
CO-4	Student shall experimentally study the magnetic hysteresis and determine related parameters and study the variation of magnetic fields due to currents and to study the frequency response of LCR circuits.

#### Course-8

Course Code:	A1MEW001
Course Title:	BASIC ENGINEERING WORKSHOP
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Will be aware of the basic engineering trades and be able to execute related work at a rudimentary level.
CO-2	Will be able to select and use proper tools for the different tasks.
CO-3	Will be able to apply knowledge and skills developed to handle real-life situations in these areas.

## Semester-II Courses

### Course-1

Course Code:	AIMAT002
Course Title:	MATHEMATICAL METHODS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems.
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation.
CO-4	Student will be able to solve Initial value problems through numerical methods.
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems.

### Course-2

Course Code:	AIMED001
Course Title:	ENGINEERING DRAWING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids.
CO-3	Student will be able to produce isometric projection from orthographic projections and vice-versa.

### Course-3

Course Code:	A1CYT001
Course Title:	ENGINEERING CHEMISTRY
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students gain the knowledge about water used in industries (boilers etc) and for drinking purpose, difference between hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis.
CO-2	Students gain the knowledge of galvanic cells, concentration cells, applications of ion selective electrodes, Conductometry and Potentiometry to understand the principle and applications of electrochemistry. Topics on electrochemical cells, batteries and fuel cells make students understand the alternate sources of energy and also help them to tackle problems of corrosion and control.
CO-3	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection.
CO-4	Students gain the knowledge on structure, synthesis properties and applications of polymers, additives to be mixed with polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and biodegradable polymers, fibre reinforced plastics and bullet proof plastics, synthetic plastics that are essential to latest technology.
CO-5	Student gain the knowledge on the determination of calorific value by bomb calorimeter, the proximate and ultimate analysis of coal, Fractional distillation of crude, followed by catalytic cracking to obtain the liquid fuels for the functioning of internal combustion engine, octane and cetane number, which have large focus on oil industry.
CO-6	Students gain knowledge on advanced materials like carbon nano tubes and fullerenes, their properties and applications, manufacturing of cement, need for green chemistry, principles of green chemistry solar cells and greenhouse effect and their importance.

### Course-4

Course Code:	A1ECT201
Course Title:	ELECTRONIC DEVICES AND CIRCUITS
Theory / Lab:	Theory

L-T-P-C:	T
Course Outcomes:	
CO-1	Students have the ability to apply the biasing concepts to determine stability factors.
CO-2	Students gain an understanding of construction, working and operation of FETs and Special semiconductor devices.
CO-3	Students have the ability to analyze small signal model to determine amplifier circuit parameters.
CO-4	Students gain an idea of feedback amplifiers and oscillators.
CO-5	Students get exposure to the concepts of Power and Tuned amplifiers.

#### Course-5

Course Code:	AIECT202
Course Title:	NETWORK ANALYSIS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to analyze Network Analysis methods using Graph theory. Have the ability to analyze Network Analysis methods using Graph theory.
CO-2	Have the ability to understand the basics of Coupled circuits and Resonance.
CO-3	Have the Knowledge to apply circuit theorems to simplify and find solutions to electrical circuits.
CO-4	Have the ability to analyze the concepts of Two-port Networks.
CO-5	Have the ability to solve circuits knowing the transient behavior.

#### Course-6

Course Code:	AIEHL002
Course Title:	ENGLISH LANGUAGE PRACTICE -II
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly.
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly.
CO-3	Student shall be able to participate well in debates and discussions.
CO-4	Student shall be able to write both Technical and General reports well.
CO-5	Student shall be able prepare resume well and face the interviews confidently.
CO-6	Student shall communicate confidently and effectively.

#### Course-7

Course Code:	A1CYL001
Course Title:	ENGINEERING CHEMISTRY LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Students will gain knowledge on the method of determination of acid/base, total hardness, iron and zinc contents in the sample solution.
CO-2	Students will gain knowledge on the principles of conductometric, potentiometric, pH metric and colorimetric methods of determination.
CO-3	Students will understand in construction of galvanic cell, determination of calorific value, and preparation of biodiesel.

#### Course-8

Course Code:	AIECL201
Course Title:	ELECTRONIC DEVICES AND CIRCUITS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Gain an understanding of the operation of diodes and their applications.
CO-2	Have the ability to sketch input and output characteristics of BJT, FET, SCR and UJT.
CO-3	Have the ability to design amplifier using BJT and FET and observe frequency response.

### Semester-III Courses

#### Course-1

Course Code:	AIMST001
Course Title:	MANAGERIAL ECONOMICS & FINANCIAL ANALYSIS
Theory / Lab:	Theory

L-T-P-C:	T
Course Outcomes:	
CO-1	Able to understand application of economics in decision making.
CO-2	Able to develop and determine cost efficient production through optimization.
CO-3	Able to aware various business environmental factors and the impact.
CO-4	Able to do financial analysis of the firm to know its performance from different parameters.

#### Course-2

Course Code:	A1CIT001
Course Title:	COMPUTER PROGRAMMING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understand the basic terminology used in computer programming.
CO-2	Write, compile and debug programs in C language.
CO-3	Design programs involving decision structures, loops and functions.
CO-4	Understand the dynamics of memory by the use of pointers.
CO-5	Create/update basic data files.

#### Course-3

Course Code:	A1EET219
Course Title:	ELECTRICAL TECHNOLOGY
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Able to explain the operation of DC generator and analyze the characteristics of DC generator.
CO-2	Able to explain the operation of DC motor and analyze their characteristics.
CO-3	Capable to develop equivalent circuit and evaluate the performance of transformers.
CO-4	Able to analyze characteristics of induction motor and understand starting methods of 3-phase induction motor.
CO-5	Capable to understand the operation of various special machines.

#### Course-4

Course Code:	A1ECT204
Course Title:	SIGNALS AND SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain basics of signals and their representation.
CO-2	Have the ability to explain signal transmission through LTI systems.
CO-3	Grasp the significance of convolution and correlation operations on signals.
CO-4	Grasp the significance of sampling process and reconstruction.
CO-5	Have the ability to analyze the signals using Fourier transform, Laplace transform and Z-transform.

#### Course-5

Course Code:	A1ECT205
Course Title:	SWITCHING THEORY AND LOGIC DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to convert numerical information in different forms.
CO-2	Have the ability to solve Boolean expressions into the simple realizable expressions and circuits.
CO-3	Grasp the significance of the concepts of flip-flops, registers, counters and PLD's.
CO-4	Have the ability to design and analyze combinational circuits and sequential circuits and to use standard combinational functions/building blocks to build larger complex circuits.

#### Course-6

Course Code:	AIMAT110
Course Title:	Complex Variables & Statistical Methods
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	

CO-1	Student will be able to construct the conjugate harmonic functions and Orthogonal Trajectories.
CO-2	Student will be able to evaluate integrals of complex functions in the given region
CO-3	Student will be able to estimate the population parameters using sample data.
CO-4	Student will be able to test the hypothesis for large samples and small samples.

#### Course-7

Course Code:	AICIL001
Course Title:	COMPUTER PROGRAMMING LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Understand the importance of the software development process - from specification to design to implementation to testing and review
CO-2	Develop problem-solving skills to translate user described problems into programs written using the C language
CO-3	Design programs involving decision structures, loops and functions.
CO-4	Understand the dynamics of memory by the use of pointers
CO-5	Write programs to create/update basic data files

#### Course-8

Course Code:	AIECL202
Course Title:	ELECTRICAL TECHNOLOGY & NETWORKS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Determine Q factor for a RLC Circuit.
CO-2	Determine time response of a first order RC/RL networks.
CO-3	Grasp the significance of different network theorems.
CO-4	Determine the efficiency of DC shunt machine.
CO-5	Determine the performance characteristics of DC shunt motor.
CO-6	Determination the efficiency and regulation characteristics of single phase transformers.

## Semester-IV Courses

#### Course-1

Course Code:	AIECT206
Course Title:	ELECTROMAGNETIC WAVES AND TRANSMISSION LINES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understand and analyze different laws and theorems of electrostatic and steady magnetic fields.
CO-2	Grasp the importance of the Maxwell equations in different forms.
CO-3	Get the knowledge of wave theory and its propagation through various mediums
CO-4	Describe the principles of operation of transmission lines and electromagnetic wave propagation through transmission lines.

#### Course-2

Course Code:	AIECT207
Course Title:	PULSE AND DIGITAL CIRCUITS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Analyze the response of various Linear and Non-linear circuits for different inputs.
CO-2	Apply the fundamental concepts of Wave Shaping for various Switching Circuits and Logic gates.
CO-3	Understand the design and analysis of Multivibrators.
CO-4	Analyze Various time base circuits, Synchronization Concepts and Sampling Gates.

#### Course-3

Course Code:	AIECT208
Course Title:	ANALOG COMMUNICATIONS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	

CO-1	Explain the frequency spectrum of analog modulated signals.
CO-2	Explain the simple systems for generating and demodulating analog modulated signals.
CO-3	Grasp the significance effects of noise for different modulation techniques by considering signal to noise ratio(SNR).
CO-4	Fully appreciate the basic principles involved in the different types of radio transmitters and receivers.
CO-5	Explain the simple systems for generating and demodulating pulse modulated signals.

#### Course-4

Course Code:	AIECT209
Course Title:	RANDOM VARIABLES AND STOCHASTIC PROCESS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understand concepts of random variable and operations on single random variable.
CO-2	Perform operations on multiple random variables.
CO-3	Explain the statistical properties of random processes.
CO-4	Explain the spectral characteristics of random processes.
CO-5	Analyze linear systems with random inputs and modeling of noise sources.

#### Course-5

Course Code:	A1CIT201
Course Title:	DATA STRUCTURES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to compare different searching and sorting methods and perform basic operations on stacks and queues.
CO-2	Have the ability to implement linked lists, trees and graph ADTs for various applications.
CO-3	Grasp the significance of creating, solving, and designing, testing, debugging and applying of linear and non-linear data structures.
CO-4	Fully appreciate the art of different data structures and applying the knowledge of data structures to various applications.

#### Course-6

Course Code:	AIECT301
Course Title:	PROGRAMMING IN MATLAB
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Know the MATLAB environment.
CO-2	Understand the MATLAB programming fundamentals
CO-3	Write Programs using commands.
CO-4	Write Programs using functions.
CO-5	Handle polynomials, and use 2D Graphic commands.

#### Course-7

Course Code:	AIECT302
Course Title:	COMPUTER ARCHITECTURE & ORGANIZATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Explain about computer architecture and organization.
CO-2	Explain hardwired and micro programmed control unit.
CO-3	Understand different types of addressing modes and memory organization.
CO-4	Understand different modes of data transfer techniques.
CO-5	Grasp the significance of parallel processing, pipelining and inter processor Communication.

#### Course-8

Course Code:	AIECL203
Course Title:	ANALOG COMMUNICATIONS LAB
Theory / Lab:	Lab
L-T-P-C:	L

Course Outcomes:	
CO-1	Demonstrate analog modulation and demodulation.
CO-2	Demonstrate pulse modulation and demodulation.
CO-3	Verify the functionality of AGC, PLL, Pre-Emphasis, De-emphasis circuits.
CO-4	Use MATLAB and Simulink software.
CO-5	Simulate modulation and demodulation of analog and pulse signals.

#### Course-9

Course Code:	A1ECL204
Course Title:	PULSE AND DIGITAL CIRCUITS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Understanding of how a high pass or low pass circuit behaves with varying time constants.
CO-2	Analyze the non-linear wave shaping circuits with and without reference voltages.
CO-3	Design waveform generating circuits and their applications

### Semester-V Courses

#### Course-1

Course Code:	A1ECT210
Course Title:	CONTROL SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Formulate the mathematical model and transfer function of mechanical & electrical Systems.
CO-2	Understand the time response of systems and analyze the stability of the systems.
CO-3	Know the stability of open loop and closed loop control systems using classical time and frequency domain techniques.
CO-4	Know the controllability and Observability of control systems using state space techniques

#### Course-2

Course Code:	A1ECT211
Course Title:	DIGITAL COMMUNICATIONS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to apply the knowledge of basic building blocks in digital communication systems.
CO-2	Have the ability to apply the knowledge of analog to digital conversion by using various pulse digital modulation techniques.
CO-3	Apply the knowledge of the optimum receivers for various digital carrier modulation techniques.
CO-4	Have ability to apply the knowledge of the effect of probability bit error in various digital modulation techniques and measure of information in the received signal.
CO-5	Have ability to apply the knowledge of the concepts of Source coding and channel coding.

#### Course-3

Course Code:	A1ECT212
Course Title:	ANTENNA WAVE PROPAGATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students will have knowledge on basic working and radiation mechanism of antennas.
CO-2	The student will understand various antennas, antenna arrays and radiation patterns.
CO-3	Students will be aware of various techniques involved in antenna parameter measurements.
CO-4	Students will identify the different types of radio-wave propagation in the atmosphere.

#### Course-4

Course Code:	A1ECT213
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Course Title:	LINEAR AND DIGITAL IC APPLICATIONS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have an ability to design circuit using operational amplifier for various applications
CO-2	Have an ability to design active filters and understand the concepts of 555 timer & PLL, A/D & D/A converters.
CO-3	Have an ability to design and analyze the various combinational circuits using digital ICs and their applications.
CO-4	Have an ability to design and analyze the various sequential circuits using digital ICs and their applications.
CO-5	Students shall know the significance of modeling of combinational & Sequential digital IC's using VHDL.

#### Course-5

Course Code:	A1ECT214
Course Title:	MICROPROCESSORS AND MICROCONTROLLERS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain and demonstrate the architecture of 8086 microprocessor & 8051 microcontroller.
CO-2	Have the ability to explain and demonstrate assembly language programs in 8086 for various applications.
CO-3	Analyze the concepts in interfacing of peripheral devices to 8086 microprocessor.
CO-4	Analyze the architecture and organization of 8051 and PIC Microcontrollers

#### Course-6

Course Code:	A1CIT206
Course Title:	OBJECT ORIENTED PROGRAMMING THROUGH JAVA
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to know OOP principles and Basics of Java & its features.
CO-2	Have the ability to construct programs on inheritance, polymorphism and packages.
CO-3	Have the ability to know Exception handling, Interface, Multithreading and Applet concepts.
CO-4	Have the ability to know Event handling and Swing mechanisms.
CO-5	Understand the significance of code reusability and grouping of similar programs at one place.
CO-6	Comprehend the significance of controlling different implementations under same interface, handling abnormal situations, concurrency and internet programs.
CO-7	Be through with the art of constructing good quality real time projects.

#### Course-7

Course Code:	A1ECT303
Course Title:	ELECTRONIC CIRCUIT ANALYSIS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to design and analyze amplifier circuit parameters using small signal high frequency hybrid model.
CO-2	Apply the knowledge of single and multistage amplifiers for real time applications.
CO-3	Have the ability to analyze tuned amplifiers.
CO-4	Apply the knowledge of regulator circuits for real time applications.
CO-5	Apply the knowledge and applications of switching and IC voltage regulator circuits.

#### Course-8

Course Code:	A1ECT304
Course Title:	VI USING LAB VIEW
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understand the basics and need of VI.
CO-2	Have the ability to create Vis using LabVIEW software.
CO-3	Fully appreciate the data acquisition techniques.
CO-4	Grasp the significance of different interfacing techniques.

CO-5	Have the ability to design some real time application using LabVIEW software
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#### Course-9

Course Code:	A1ECL205
Course Title:	DIGITAL COMMUNICATIONS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	The students will be able the ability to explain and demonstrate the conversion of analog to digital signals.
CO-2	The students grasp the significance of digital modulation techniques.
CO-3	The students develop the ability to explain and perform the Source coding and Channel coding techniques.

#### Course-10

Course Code:	A1ECL206
Course Title:	IC APPLICATIONS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Have the ability to demonstrate various applications using Op-amp, construct waveform generation circuits.
CO-2	Have the ability to explain various multivibrators
CO-3	Students will acquire the significance of functionality of A/D and D/A converters.
CO-4	Students will acquire the significance of functionality of various Digital ICs .
CO-5	Have the ability to demonstrate various applications using Op-amp, construct waveform generation circuits.

## Semester-VI Courses

#### Course-1

Course Code:	A1ECT215
Course Title:	DIGITAL SIGNAL PROCESSING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students will be able to explain different discrete time signals and systems.
CO-2	The students can analyze the response of different discrete time systems for various inputs
CO-3	The students grasp the significance in designing digital FIR filters using different techniques.
CO-4	The students grasp the significance in designing digital IIR filters using different techniques.
CO-5	The students learn design procedures used for filter banks and architecture of DSP processor.

#### Course-2

Course Code:	A1ECT216
Course Title:	VLSI DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate the concepts of different MOS technologies.
CO-2	Grasp the significance of Basic Electrical Properties Of MOS circuit Design Processes.
CO-3	Have the ability to explain basic circuit concepts & scaling of MOS circuits.
CO-4	Gain the knowledge on the subsystem design.
CO-5	Grasp the significance of the Programmable logic devices, memories and FPGAs.

#### Course-3

Course Code:	A1CIT376
Course Title:	Basics of Operating Systems
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain in detail the purpose of the operating system, kernel structure and its interface with application software and to explain in detail the different process management related aspects of typical operating systems

CO-2	Have the ability to describe in detail the different ways and detail in which the memory management and file management services are provided in a typical operating systems.
CO-3	Have the ability to describe in detail the I/O management and protection and security services provided by a typical operating system.
CO-4	Grasp the significance of importance, role and details of basic operating system structure, process management services and memory management services
CO-5	Grasp the significance of different ways in file system and file management services are provided by operating systems and how operating system take care of protection and security services
CO-6	Fully appreciate the role, different alternate ways in which operating systems are implemented and different variations on the common services provided by operating systems.

#### Course-4

Course Code:	A1ECT305
Course Title:	COMPUTER NETWORKS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students develop the ability to explain different Network Protocols like OSI,TCP/IP.
CO-2	The students can fully appreciate data transfer from one system to another by using different mediums.
CO-3	The students will be able to explain and demonstrate Routing & Congestion Control.
CO-4	The students will be able to explain and demonstrate Connection Oriented and connection less oriented service protocols.
CO-5	The student grasp the significance of different application layer protocols.

#### Course-5

Course Code:	A1ECT306
Course Title:	ELECTRONIC SWITCHING SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Ability to understand design of different switching systems.
CO-2	Ability to design solutions for switching networks for given number of incoming-outgoing trunks.
CO-3	Ability to understand the impact of digital switching systems.
CO-4	Ability to explain different switching systems such as electronic space division switching and time division switching.
CO-5	Ability to analyze services provided by Integrated Services Digital Network.

#### Course-6

Course Code:	A1ECT307
Course Title:	INFORMATION THEORY AND CODING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Ability to apply the mathematical knowledge of probability to measure information discrete message source.
CO-2	Ability to compute the capacity and efficiency of discrete and continuous time channels in presence and absence of added noise.
CO-3	Ability to apply source encoding algorithms to ensure transmission of information of a discrete message source using minimum number of bits.
CO-4	Ability to ensure error free transmission of information of a discrete message source using suitable channel encoding techniques.
CO-5	Ability to ensure error free transmission of information of a discrete message source using efficient channel encoding techniques with minimum redundancy.

#### Course-7

Course Code:	A1ECT308
Course Title:	EMBEDDED AND REAL TIME OPERATING SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students develops the ability to explain the construction and working of Embedded Systems.

CO-2	Fully appreciate the various basic building blocks of Embedded Systems.
CO-3	The students understand the different techniques in design, implementation, and debuggin.
CO-4	Students will gain an understanding of the fundamentals of real time models based on RTOS.
CO-5	The students will grasp the significance of various Hardware software co-design processes.

#### Course-8

Course Code:	ALECT309
Course Title:	CELLULAR MOBILE COMMUNICATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Learners will acquire the ability to explain the basic elements of cellular communication.
CO-2	Pupils will grasp the significance of different types of interferences in cellular communication.
CO-3	Students will demonstrate skills related to various Interference minimization techniques.
CO-4	Students will attain knowledge on different types of path loss components.
CO-5	Learners will explore and appreciate the efficient way of modern wireless communication systems.

#### Course-9

Course Code:	ALECT310
Course Title:	WIRELESS SENSORS AND NETWORKS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will have the ability to understand the challenges of wireless sensor networks and technologies.
CO-2	Learners will have the ability to understand the different architectures and hardware components of wireless sensor networks.
CO-3	Pupils will Grasp the importance of Topology control of wireless sensor networks.
CO-4	Students will acquire the ability to understand the communication protocols
CO-5	Learners will have the ability to understand the sensor network platforms and tools.

#### Course-10

Course Code:	ALECT311
Course Title:	ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will have the ability to explain AI and its agents
CO-2	Learning will fully appreciate the various search strategies and knowledge representation techniques
CO-3	Pupils will have the ability to explain characteristics of neural networks
CO-4	Pupils will grasp the significance of feed forward neural networks.
CO-5	Pupils will grasp the significance of feedback neural networks.

#### Course-11

Course Code:	ALECT312
Course Title:	OPTICAL COMMUNICATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will have the ability to explain the various functional blocks in optical communication
CO-2	Students will apply the knowledge of optical sources and detectors
CO-3	Learners will develop analytical skills related to the concepts of fibers, connectors and splicer's used for optical communication.
CO-4	Pupils will grasp the significance of different types of losses in optical communication.
CO-5	Learners will gain knowledge on different types of signal distortion and the ways of measuring distortion loss in a fiber.

**Course-12**

Course Code:	A1CHT401
Course Title:	NON-CONVENTIONAL SOURCES OF ENERGY
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Ability to explain the working of solar collectors and various applications
CO-2	Ability to explain different types of wind mills for power generation and the biomass sources.
CO-3	Ability to explain the generating of power from geothermal energy and ocean energy
CO-4	Ability to explain about different direct energy conversion devices.

**Course-13**

Course Code:	A1CIT405
Course Title:	Web Design & Development
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understanding importance of html & JavaScript in view of designing a front end for webpage
CO-2	Understand the importance of data transporting and validation of data using javascripts
CO-3	Understanding http package and access of web pages & php
CO-4	Connecting with database using mysql.

**Course-14**

Course Code:	A1ECT311
Course Title:	ARTIFICIAL INTELLIGENCE AND NEURAL NETWORKS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will have the ability to explain AI and its agents.
CO-2	Learning will fully appreciate the various search strategies and knowledge representation techniques.
CO-3	Pupils will have the ability to explain characteristics of neural networks
CO-4	Pupils will grasp the significance of feed forward neural networks.
CO-5	Pupils will grasp the significance of feedback neural networks.

**Course-15**

Course Code:	A1ECL207
Course Title:	MICROPROCESSORS AND MICROCONTROLLERS LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	The students develop the ability to explain the assembly language programs and convert them into machine language
CO-2	The students grasp the significance of writing the programs in assembly language and their execution using MASM software.
CO-3	The students develop the ability to interface peripherals with 8086 microprocessor
CO-4	The students will be able to appreciate the programming of a microcontroller using a development environment that includes debuggers, editing tools, and compilers.

**Course-16**

Course Code:	A1ECL208
Course Title:	DIGITAL SYSTEM DESIGN LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	The students develop the ability to explain the VerilogHDL Programs and execute using Xilinx Vivado Suite software.
CO-2	The students will be able to design and analyze various combinational and sequential logic circuits.
CO-3	The students grasp the significance to perform the analysis with appropriate synthesizer using Xilinx Vivado Synthesizer
CO-4	The students come to terms with the understanding of how to verify the implemented logic with Nexys-4 DDR FPGA hardware module/kit.

**Semester-VII Courses****Course-1**

Course Code:	AIECT217
Course Title:	MICROWAVE ENGINEERING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students will have knowledge on Microwave Spectrum, frequency bands and the applications of Microwaves.
CO-2	The students will be able to Understand TE, TM modes in rectangular and circular waveguides.
CO-3	The student will be able to understand the applications microwave components.
CO-4	The student will be able to understand principle and operations of microwave sources.
CO-5	The student will be able to learn how to make measurements of power ,VSWR, frequency and related to microwave engineering.

#### Course-2

Course Code:	AIECT218
Course Title:	ELECTRONIC MEASUREMENTS AND INSTRUMENTATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain the performance characteristics and the various errors of measuring instruments
CO-2	The various construction and functioning of signal generators, wave analyzers and CRO used for various measurements of electrical and non-electrical quantities for real time applications.
CO-3	Have the ability to analyze the working of various measurement bridges, transducers for physical parameters measurement
CO-4	Utilizing the knowledge on the significance of data acquisition systems used for Industrial Applications

#### Course-3

Course Code:	AIECT313
Course Title:	RADAR SYSTEMS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to understand the basic working principle of radar and target detection procedure.
CO-2	Have the ability to explain the radar Transmitter, Receiver and the selection of suitable antennas for transmitting and receiving the signal and the use of radomes.
CO-3	Get the knowledge of different types of Radars their applications and limitations.
CO-4	Grasps the significance of the effect of noise, uses of matched filters and signal processing.

#### Course-4

Course Code:	AIECT314
Course Title:	SATELLITE COMMUNICATIONS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The students will be able to understand the basic construction and working of satellites for communication.
CO-2	The students gain the ability to analyze the link budget equations to provide sufficient margin for performance in variety of common satellite orbits for a communication satellite system.
CO-3	The students will be able to understand the design of multiple-access satellite communications networks.
CO-4	The students grasps the significance of engineering impact of the various satellite components on performance

#### Course-5

Course Code:	AIECT315
Course Title:	DIGITAL TELEVISION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Acquisition of the fundamentals in Television transmission.

CO-2	Acquire the applications in HDTV for future prospects.
CO-3	Have the ability to understand compression standards.
CO-4	Have the ability to learn the concepts of HDTV and DTV standards.

#### Course-6

Course Code:	AIECT316
Course Title:	DIGITAL IMAGE PROCESSING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The ability to explain the representation of gray & colour image model and various image transformations.
CO-2	The students will be able to appreciate the various image enhancement techniques in time domain and frequency domain.
CO-3	The students got acquainted with the differences between image restoration and reconstruction.
CO-4	The students appreciate the various segmentation techniques.
CO-5	The students grasp the significance of various image coding techniques.

#### Course-7

Course Code:	AIECT317
Course Title:	RF CIRCUIT DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	The student will be able to design and analysis of modern RF components and
CO-2	circuits.
CO-3	The students will be able to know Transmission lines, Single and Multiport networks
CO-4	and applications of Smith Chart.

#### Course-8

Course Code:	AIECT318
Course Title:	BIOMEDICAL INSTRUMENTATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students will fully appreciate the importance of the Biomedical Engineering and instrumentation field of study.
CO-2	Students have the ability to explain the basic mechanisms and principles of biomedical sensors and grasp the significance of issues encountered in attempting to take measurements from a living body.
CO-3	Students have the ability to explain the Physiology, and techniques for measuring various parameters in the Cardiovascular , Respiratory & Nervous Systems in the body.
CO-4	Students have the ability to explain the diagnostic techniques, Bio-Telemetry and the instruments used in Patient care and monitoring.
CO-5	Students will grasp the significance of Amplifiers, study the Electrical safety of Medical Equipment & Hazard Prevention

#### Course-9

Course Code:	AIECT319
Course Title:	EMI/EMC
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to classify different types of electromagnetic interferences.
CO-2	Have the ability to understand sources of electromagnetic noise and types.
CO-3	Grasp the importance of radiated/conducted interference measurements.
CO-4	Have the ability to understand the techniques of cabling, grounding and bonding and

#### Course-10

Course Code:	AIECT320
Course Title:	ANALOG IC DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain the MOS devices and modeling techniques.
CO-2	Grasp the significance of analog CMOS sub circuits.

CO-3	Have the ability to explain the design and analyze CMOS amplifiers.
CO-4	Have the ability to understand the CMOS operational amplifiers.

#### Course-11

Course Code:	A1ECT321
Course Title:	DIGITAL IC DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of MOS Inverter and its characteristics.
CO-2	Have the ability to understand the static and dynamic CMOS logic circuits.
CO-3	Have the ability to explain and analyze the combinational and sequential logic circuits.
CO-4	Grasp the significance of SRAM and DRAM Design

#### Course-12

Course Code:	A1CET401
Course Title:	Project Planning and Management
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Know the concepts of project planning and management.
CO-2	Construct networks using PERT and CPM techniques.
CO-3	Update networks using resource allocation and resource smoothening
CO-4	List different management information systems

#### Course-13

Course Code:	A1MET310
Course Title:	Robotics
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Identify components and classification of robot
CO-2	Capable of performing transformation in developing forward and inverse kinematic and dynamic problems
CO-3	Select actuators and sensors for different robot applications
CO-4	Design work cell and select robots for applications

#### Course-14

Course Code:	A1MBT311
Course Title:	Internet Marketing
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	An overall understanding of the dimensions of marketing
CO-2	Ability to develop strategies to leverage the potential of internet marketing
CO-3	An ability to develop and leverage web marketing models
CO-4	An Understanding of online consumer behavior and ethics in digital marketing.

#### Course-15

Course Code:	A1ECL209
Course Title:	MICROWAVE ENGINEERING LAB
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	The students will be able to explain and demonstrate different microwave components and sources in a microwave bench.
CO-2	The students will be able to measure various parameters of different microwave components.
CO-3	Fully appreciate the concepts of V-I characteristics of different optical sources
CO-4	The students can explain the significance of measurement techniques like Data rate measurement, Numerical Aperture and Bending Losses of optical fiber.

#### Course-16

Course Code:	A1ECL210
Course Title:	DIGITAL SIGNAL PROCESSING LAB
Theory / Lab:	Lab
L-T-P-C:	L

<b>Course Outcomes:</b>	
CO-1	The course simulates basic signal processing operations like convolution and correlation using MATLAB.
CO-2	The student acquires the knowledge of implementing DSP operations like DFT and FFT using MATLAB.
CO-3	The student develops the ability to simulate power spectral density of a given signal using MATLAB.
CO-4	It equips the learner to simulate response of IIR and FIR filters using MATLAB.
CO-5	The student will implement real time IIR and FIR filters using TMS320C6713 DSP processor.

## Semester-VIII Courses

### Course-1

Course Code:	AIECP601
Course Title:	Directed Study
Theory / Lab:	Theory
L-T-P-C:	T
<b>Course Outcomes:</b>	
CO-1	Demonstrate sound technical knowledge in the concepts required for project
CO-2	Exhibit knowledge in tools required for executing the project

### Course-2

Course Code:	AIECP602
Course Title:	Project
Theory / Lab:	Lab
L-T-P-C:	P
<b>Course Outcomes:</b>	
CO-1	Demonstrate a sound technical knowledge of the selected project topic
CO-2	Exhibit the knowledge of problem identification, formulation and solution
CO-3	Design engineering solutions to complex problems
CO-4	Communicate with engineers and the community at large in written and oral forms
CO-5	Demonstrate the knowledge, skills and attitudes of a professional engineer

## M.Tech. (VLSI)

### Semester-I Courses

#### Course-1

Course Code:	A1VLT101
Course Title:	VLSI TECHNOLOGY
Theory / Lab:	Theory
L-T-P-C:	T
<b>Course Outcomes:</b>	
CO-1	Fully appreciate the concepts of different MOS technologies
CO-2	Grasp the significance of Basic Electrical Properties Of MOS and BiCMOS Circuit Design Processes
CO-3	Have the ability to explain basic circuit concepts & scaling of MOS circuits
CO-4	Gain the knowledge on the subsystem design
CO-5	Grasp the significance of the architecture design, floor planning, chip design

#### Course-2

Course Code:	A1VLT102
Course Title:	ANALOG IC DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
<b>Course Outcomes:</b>	
CO-1	Have the ability to explain various MOS devices and modeling techniques
CO-2	Grasp the significance of analog CMOS sub circuits.
CO-3	Have the ability to explain the design and analyze CMOS amplifiers.
CO-4	Have the ability to understand the CMOS operational amplifiers
CO-5	Grasp the significance of comparators

#### Course-3

Course Code:	A1VLT103
Course Title:	DIGITAL IC DESIGN

Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of MOS Inverter and its characteristics.
CO-2	Have the ability to understand the static and dynamic CMOS logic circuits
CO-3	Have the ability to explain and analyze the combinational and sequential logic circuits
CO-4	Grasp the significance of SRAM and DRAM Design

#### Course-4

Course Code:	A1VLT104
Course Title:	CPLD AND FPGA ARCHITECTURES AND APPLICATIONS
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain the field programmable logic technologies.
CO-2	Grasp the importance of Programming Technologies & Programmable Interconnects of FPGAs
CO-3	Grasp the significance of architectures of SRAM & Anti-Fuse Programmed FPGAs
CO-4	Have the ability to design of digital logic circuits.
CO-5	Have the ability to explain the field programmable logic technologies.

#### Course-5

Course Code:	A1VLT201
Course Title:	DIGITAL SYSTEM DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students fully appreciate about minimization techniques like k-map, QM method and CAMP Algorithm
CO-2	Students grasp the significance of State diagrams, reliable ASM charts and design of sequential circuits using ROMs, PLAs, CPLD and FPGAs.
CO-3	Students have the ability to minimize digital circuits through PLA minimization and Folding.
CO-4	Students have the ability to design and analyze various Test Generation methods.
CO-5	Students will gain an understanding of Fault Diagnosis in Sequential Circuits.

#### Course-6

Course Code:	A1VLT202
Course Title:	MOS DEVICE MODELING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the knowledge about basic device physics.
CO-2	Grasp the knowledge about MOSFET devices.
CO-3	Have the ability to understand and analyze CMOS Performance Factors.
CO-4	Grasp the knowledge on Bipolar devices and Bipolar device design.
CO-5	Have the ability to understand about performance factors of CMOS and Bipolar devices.

#### Course-7

Course Code:	A1VLT203
Course Title:	SYSTEM MODELING AND SIMULATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the knowledge about basic simulation modeling.
CO-2	Have the ability to grasp the knowledge about software simulation models and their applications.
CO-3	Grasp the knowledge on time and event driven models and simulations.
CO-4	Have the ability to grasp the knowledge on discrete and continuous time MARKOV process.
CO-5	Have the ability to understand system optimization and modeling and simulation methodology.

#### Course-8

Course Code:	A1VLT204
Course Title:	DIGITAL DESIGN WITH VERILOG HDL
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate the about concepts of different types of models using Verilog HDL
CO-2	Grasp the significance of combinational and sequential logic designs using Verilog HDL
CO-3	Have the ability to explain the design and analyze digital logic design using Verilog HDL

CO-4	Have the ability to understand the Synthesis techniques using combinational and sequential logic circuit designs
CO-5	Grasp the significance of testing of digital logic circuits with CAD Tools

#### Course-9

Course Code:	A1VLT205
Course Title:	VLSI SIGNAL PROCESSING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of DSP algorithms and convolution
CO-2	Grasp the significance of different techniques of folding and unfolding
CO-3	Gain the knowledge on the systolic array design methodology
CO-4	Grasp the significance of scaling and power consumption

#### Course-10

Course Code:	A1VLT206
Course Title:	LOGIC SYNTHESIS AND VERIFICATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of hardware modeling languages and the optimization problems
CO-2	Grasp the significance of minimization techniques and their problems
CO-3	Have the ability to understand the sequential circuits optimization and the combinational networks
CO-4	Grasp the significance of cell library binding algorithms with rules
CO-5	Have the ability to understand about Performance Factors of different synthesis Techniques

#### Course-11

Course Code:	A1VLL101
Course Title:	FPGA LABORATORY
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Grasp the significance of hardware modeling languages and the optimization problems
CO-2	Grasp the significance of minimization techniques and their problems
CO-3	Have the ability to understand the sequential circuits optimization and the combinational networks
CO-4	Grasp the significance of cell library binding algorithms with rules
CO-5	Have the ability to understand about Performance Factors of different synthesis Techniques

## Semester-II Courses

#### Course-1

Course Code:	A1VLT105
Course Title:	LOW POWER VLSI DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate about concepts of different Fundamentals Of Low Power VLSI Design
CO-2	Grasp the significance of Low-Power Design Approaches,Low-Power Design through voltage scaling
CO-3	Have the ability to explain Low Voltage Low Power Adders
CO-4	Gain the knowledge on the Low Voltage Low Power Multipliers
CO-5	Grasp the significance of the Low-Voltage Low-Power Memories

#### Course-2

Course Code:	A1VLT106
Course Title:	CMOS MIXED SIGNAL VLSI DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate about the concepts of switched capacitor circuits
CO-2	Grasp the significance of Phased Locked Loop (PLL).
CO-3	Have the ability to explain the Data Converter Fundamentals.
CO-4	Have the ability to understand the Nyquist Rate A/D Converters
CO-5	Grasp the significance of Oversampling Converters

**Course-3**

Course Code:	A1VLT107
Course Title:	TESTING AND TESTABILITY
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate about the concepts of Digital and Analog VLSI Testing and Fault Modelling.
CO-2	Grasp the significance of Algorithms for True value Simulation and Fault Simulation.
CO-3	Have the ability to explain Controllability and Observability Measures and Scan Design Techniques
CO-4	Have the ability to understand the BIST Process , Pattern Generation , Response Compaction
CO-5	Grasp the significance of Boundary Scan Test Instruction and BSDL Description Components

**Course-4**

Course Code:	A1VLT108
Course Title:	VLSI PHYSICAL DESIGN AUTOMATION
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate about the design and analyze the VLSI design cycle and physical design steps.
CO-2	Grasp the significance about partitioning, floor planning, pin assignment and placement algorithms.
CO-3	Have the ability to analyze the global and detailed routing algorithms.
CO-4	Have the ability to understand the physical design automation of FPGAS and MCMS.
CO-5	Grasp the significance of ESD protection, chip input and output circuits.

**Course-5**

Course Code:	A1VLT207
Course Title:	CUSTOM IC DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of introduction of ASIC designs
CO-2	Grasp the significance of data logic cells and library design
CO-3	Have the ability to explain the low level design and schematic entry and programmable ASIC s
CO-4	Have the ability to understand the introduction to full custom IC design
CO-5	Grasp the significance of advanced techniques for specialised building blocks

**Course-6**

Course Code:	A1VLT208
Course Title:	HARDWARE SOFTWARE CO-DESIGN
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the significance of Co-design issues and Co-synthesis algorithms
CO-2	Have the ability to analyze on Prototyping and Emulation
CO-3	Have the ability to explain about analyze Complication techniques and tools for embedded processor architecture
CO-4	Have the ability to understand Design specification and verification
CO-5	Grasp the significance about languages for system level specification and design 1 along with design 2

**Course-7**

Course Code:	A1VLT209
Course Title:	DSP PROCESSORS AND ARCHITECTURES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Grasp the fundamentals of Digital Signal Processing.
CO-2	Have the ability to understand Architecture for programmable DSP Devices.
CO-3	Have the ability to explain the programmable Digital Signal Processors (TMS320C54XX).
CO-4	Grasp the information on Analog Devices Family of DSP Devices.
CO-5	Have the ability to explain about the Interfacing Memory and I/O Peripherals to Programmable DSP Devices.

**Course-8**

Course Code:	A1VLT210
Course Title:	SCRIPTING LANGUAGES
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Have the ability to explain about the concepts of scripting
CO-2	Grasp the significance of PERL and advanced PERL
CO-3	Have the ability to explain the Tool Command Language .
CO-4	Have the ability to understand Advanced TCL
CO-5	Grasp the significance of Tool Kit, Java script, OOP concepts

#### Course-9

Course Code:	A1VLT211
Course Title:	OPTIMIZATION TECHNIQUES AND APPLICATIONS TO VLSI
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Fully appreciate the about concepts of Statistical Modeling
CO-2	Grasp the significance of Statistical Performance, Power and Yield Analysis
CO-3	Have the ability to explain the Convex Sets, Convex Functions and Convex Optimization Problems.
CO-4	Have the ability to understand the Standard Cell And Macro Cell Placement
CO-5	Grasp the significance of FPGA Technology Mapping and Automatic Test Generation

#### Course-10

Course Code:	A1VLT212
Course Title:	SEMICONDUCTOR MEMORY DESIGN AND TESTING
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Students fully appreciate about Volatile memories in aspects of cell architectures, designs, technologies and applications.
CO-2	Students fully appreciate about Non-Volatile memories in aspects of cell architectures, designs, technologies and applications.
CO-3	Students grasp the significance of to fault modeling and testing of the volatile memory and non-volatile memory
CO-4	Students will gain an understanding of Advanced Memory Technologies.

#### Course-11

Course Code:	A1VLL102
Course Title:	CUSTOM IC DESIGN LABORATORY
Theory / Lab:	Lab
L-T-P-C:	L
Course Outcomes:	
CO-1	Have the ability to explain the VLSI Design Methodologies using Mentor Graphics Tools
CO-2	Grasp the significance of various design logic Circuits in full-custom IC Design and ASIC Design Flow
CO-3	Have the ability to explain the Physical Verification in Layout Extraction
CO-4	Fully Appreciate the design and analyze of analog, digital and mixed signal simulation
CO-5	Grasp the Significance of Pre-Layout Simulation and Post-Layout Simulation

### Semester-III Courses

#### Course-1

Course Code:	A1VLT109
Course Title:	Research Methodologies
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Understand the role and importance of research in the engineering stream.
CO-2	Identify and discuss the issues and concepts salient to the research process.
CO-3	Identify the complex issues inherent in selecting a research problem, selecting an appropriate research design, and implementing a research project
CO-4	Demonstrate the procedures of sampling, data collection, analysis and reporting

#### Course-2

Course Code:	A1VLV401
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Course Title:	Comprehensive Viva-Voce
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Demonstrate knowledge in the program domain
CO-2	Exhibit professional etiquette suitable for career progression

### Course-3

Course Code:	A1VLR401
Course Title:	Self-Study (Pre-requisite)
Theory / Lab:	Theory
L-T-P-C:	T
Course Outcomes:	
CO-1	Demonstrate sound technical knowledge in the concepts required for project
CO-2	Exhibit knowledge in tools required for executing the project

### Course-4

Course Code:	A1VLS501
Course Title:	Seminar
Theory / Lab:	Theory
L-T-P-C:	P
Course Outcomes:	
CO-1	Demonstrate good communication skills
CO-2	Exhibit knowledge in general and domain areas

### Course-5

Course Code:	A1VLP501
Course Title:	Project Phase – I
Theory / Lab:	Theory
L-T-P-C:	P
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of the selected project topic
CO-2	Exhibit the knowledge of problem identification, formulation and solution
CO-3	Design engineering solutions to complex problems
CO-4	Communicate with engineers and the community at large in written and oral forms
CO-5	Demonstrate the knowledge in publishing papers in reputed journals

## Semester-IV Courses

### Course-1

Course Code:	A1VLP502
Course Title:	Project Phase – II
Theory / Lab:	Theory
L-T-P-C:	P
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of the selected project topic
CO-2	Exhibit the knowledge of problem identification, formulation and solution
CO-3	Design engineering solutions to complex problems
CO-4	Communicate with engineers and the community at large in written and oral forms
CO-5	Demonstrate the knowledge in publishing papers in reputed journals

# Dept. of CSE

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

## B.Tech. (Computer Science and Engg)

### Semester-I Courses

Course-1	
Course Code:	AIMAT001
Course Title:	<b>ENGINEERING MATHEMATICS-I</b>
Theory / Lab:	T
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students will be able to apply the knowledge of solving 1 <sup>st</sup> order & 1 <sup>st</sup> degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems
CO-2	Student will be able to find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Students will be able to apply the concepts of Maxima and Minima for finding extreme values
CO-4	Student will be able to formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation

Course-2	
Course Code:	A1CYT001
Course Title:	<b>ENGINEERING CHEMISTRY</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students gain the knowledge about water used in industries (boilers etc) and for drinking purpose, difference between hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis.
CO-2	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection.
CO-3	Students gain the knowledge on structure, synthesis properties and applications of polymers, additives to be mixed with polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and biodegradable polymers, fibre reinforced plastics and bullet proof plastics, synthetic plastics that are essential to latest technology.
CO-4	Student gain the knowledge on the determination of calorific value by bomb calorimeter, the proximate and ultimate analysis of coal, Fractional distillation of crude, followed by catalytic cracking to obtain the liquid fuels for the functioning of internal combustion engine, octane and cetane number, which have large focus on oil industry.
CO-6	Students gain knowledge on advanced materials like carbon nano tubes and fullerenes, their properties and applications, manufacturing of cement, need for green chemistry, principles of green chemistry solar cells and greenhouse effect and their importance.

Course-3	
Course Code:	A1CET001
Course Title:	<b>BASICS OF CIVIL &amp; MECHANICAL ENGINEERING</b>
Theory / Lab:	T
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to understand floor area, plinth area, and building materials such as brick, cement, concrete, steel.
CO-2	Student will be able to understand the concepts of surveying, infrastructure such as buildings, roads, bridges, dams
CO-3	Student will be able to understand the working and function of various components of systems and subsystems of I.C. Engines, turbines, pumps and refrigerating systems
CO-4	Student will be able to identify various types of mechanical components suitable for power transmission
CO-5	Student will be able to understand Casting, forming and different metal joining processes like Welding, Brazing, Soldering

Course-4	
Course Code:	A1CHT001
Course Title:	<b>ENVIRONMENTAL STUDIES</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	

CO-1	Student will have knowledge on the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
CO-2	Student will have knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
CO-3	Student will have knowledge on various attributes of the pollution and their impact and measures to reduce or control the pollution along with waste management practices
CO-4	Student will have knowledge on social issues both rural and urban environment and the possible means to combat the challenges
CO-5	Student will have knowledge on the environmental legislations of India and the first global initiatives towards sustainable development, environmental assessment and the stages involved in EIA and the environmental audit

#### Course-5

Course Code:	A1ECT001
Course Title:	<b>FUNDAMENTALS OF ELECTRONIC CIRCUITS AND DEVICES</b>
Theory / Lab:	T
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/her professional requirement
CO-5	Student shall be able to Speak in English well
CO-6	Student shall be able to understand and analyze the core components of his study well

#### Course-6

Course Code:	A1EHL001
Course Title:	<b>ENGLISH LANGUAGE PRACTICE -I</b>
Theory / Lab:	T
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy
CO-2	Student shall be able to read and comprehend the content in English well
CO-3	Student shall be able to write well for his/her professional requirement
CO-4	Student shall be able to Speak in English well
CO-5	Student shall be able to understand and analyze the core components of his study well

#### Course-7

Course Code:	A1CYL001
Course Title:	<b>ENGINEERING CHEMISTRY LAB</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Will be aware of the basic engineering trades and be able to execute related work at a rudimentary level
CO-2	Will be able to select and use proper tools for the different tasks
CO-3	Will be able to apply knowledge and skills developed to handle real-life situations in these areas

#### Course-8

Course Code:	A1MEW001
Course Title:	<b>BASIC ENGINEERING WORKSHOP</b>
Theory / Lab:	T
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation.
CO-4	Student will be able to solve Initial value problems through numerical methods.
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems

## Semester-II Courses

#### Course-1

Course Code:	A1MAT002
Course Title:	<b>MATHEMATICAL METHODS</b>

Theory / Lab:	L
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation
CO-4	Student will be able to solve Initial value problems through numerical methods
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems.

#### Course-2

Course Code:	A1MED001
Course Title:	<b>ENGINEERING DRAWING</b>
Theory / Lab:	T
L-T-P-C:	1-0-3-3
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids
CO-3	Student will be able to produce isometric projection from orthographic projections and vice-versa

#### Course-3

Course Code:	A1PYT002
Course Title:	<b>APPLIED PHYSICS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand the phenomena of interference, diffraction and polarization exhibited by light waves
CO-2	Student shall understand about laser, its characteristics and production with an example and application of laser in specific to optic fiber.
CO-3	The student shall understand about different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction
CO-4	Student will be able to understand foundation principles of quantum mechanics and semiconductors.
CO-5	Student shall understand about response of the materials in presence of electric and magnetic fields and the basic laws of electromagnetic waves.

#### Course-4

Course Code:	A1CIT001
Course Title:	<b>COMPUTER PROGRAMMING</b>
Theory / Lab:	T
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Have the ability to write a formal algorithmic solution for the given problem & explain the features of C like types including scalar & vector types, operators, expressions, expression evaluation, operator precedence, sequential, conditional & iterative constructs
CO-2	Have the ability to use modular programming constructs of C while appreciating different ways of exchanging inputs and outputs among modules and different memory allocation strategies in C
CO-3	Have the ability to define & use user defined data types using C constructs and write C programs that handle files
CO-4	Grasp the significance of primary constructs & methodology of procedural language C and appreciate the orthogonality of the same writing reasonably complicated programs
CO-5	Grasp the significance of type extensibility in C, need for address as a data type and library functions for dealing with files in writing more complicated programs
CO-6	Fully appreciate the art of procedural programming in C and develop programs optimally using the full feature set of C language

#### Course-5

Course Code:	A1EHL002
Course Title:	<b>ENGLISH LANGUAGE PRACTICE -II</b>
Theory / Lab:	T
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly
CO-3	Student shall be able to participate well in debates and discussions
CO-4	Student shall be able to write both Technical and General reports well

CO-5	Student shall be able prepare resume well and face the interviews confidently
CO-6	Student shall communicate confidently and effectively

#### Course-6

Course Code:	A1CIL001
Course Title:	<b>COMPUTER PROGRAMMING LAB</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Have the ability to pick and choose the required built-in data-types for the specific problem and utilize the full power of operators and expression evaluation of C Language while writing programs for any given problem.
CO-2	Have the ability to use choose and utilize different control constructs in C Language depending on the context of the need while developing a C program for any specific problem.
CO-3	Have the ability to divide the parts of a program solution into functions and write a program in C as an inter-play of functions using each other in what is called modular programming
CO-4	Have the ability to fully appreciate the concept and utilization of single and multidimensional arrays of different data-types in C.
CO-5	Have the ability to appreciate the concept of address variables and understand the benefits and utilization of the same along with under the flexibility provided by dynamic memory allocation and its comparison to static memory allocation.
CO-6	Have the ability to appreciate the concept of user defined data types and utilize these concepts to define new composite data types as required for implementing solutions to a problem in a C program.
CO-7	Have the ability to appreciate the library support available in standard C for dealing with external files both for read and write purposes and use them as required while developing C Programs.

#### Course-7

Course Code:	A1PYL002
Course Title:	<b>APPLIED PHYSICS LAB</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to experimentally observe interference and diffraction patterns of light waves due to different optical devices and determine the given parameters.
CO-2	Student shall understand the tir process in the optic fiber experimentally and will be able to determine the numerical aperture and bending loss of the optic fiber.
CO-3	Student shall experimentally determine the temperature coefficient of resistance, energy gap, type of charge carriers and concentration of charge carriers in a semiconductor and to study the I-V characteristics of the given p-n junction diode
CO-4	Student shall experimentally study the magnetic hysteresis and determine related parameters and study the variation of magnetic fields due to currents and to study the frequency response of LCR circuits.

#### Course-8

Course Code:	A1EHT101
Course Title:	<b>PROFESSIONAL COMMUNICATION</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	students apply the principles and functions of corporate communication
CO-2	Students receive input on various business and professional genres that serve as a basis for completion of their letter, short business report, meeting simulation and minutes of a meeting
CO-3	Students analyze effective written and spoken communication in organization
CO-4	Acquiring the skills required from linguistic perspective for preparing themselves for their prospective careers in business and management domain.

## Semester-III Courses

#### Course-1

Course Code:	A1CIT201
Course Title:	<b>DATA STRUCTURES</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to compare different searching and sorting methods and perform basic operations on stacks and queues (Knowledge Outcome)

CO-2	Have the ability to implement linked lists and trees and use them in various applications (Knowledge Outcome)
CO-3	Have the ability to implement various tree and graph ADTs and to use them solve common graph problems (Knowledge Outcome)
CO-4	Grasp the significance of creating, solving, and designing, testing, debugging and applying of linear data structures. (Understanding Outcome)
CO-5	Grasp the significance of creating, solving, and designing, testing, debugging and applying of non-linear data structures. (Understanding Outcome)
CO-6	Fully appreciate the art of different data structures and applying the knowledge of data structures to various applications. (Applying)

#### Course-2

Course Code:	A1CIT202
Course Title:	<b>Mathematical Foundations of Computer Science</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will be able to formulate and validate the logical expressions for a variety of applications and will be able to understand the fundamental results of number theory.
CO-2	Students will be able to design relational databases, design finite automata to recognize string patterns and be able to solve problems using mathematical induction
CO-3	Students will be able to formulate all possible permutations and combinations for problems in hand and also solve recurrence relations for various problems
CO-4	Students can grasp the significance of mathematical and predicate logic, number theory and set theory in computer science applications.
CO-5	Students can grasp the significance of having knowledge of combinatorics and recurrence relations which help in effective design of various software applications
CO-6	Students can fully appreciate the feature set and essence of various principles of mathematics which can be applied in real time computer science applications

#### Course-3

Course Code:	A1CIT203
Course Title:	<b>Digital Logic Design</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to deal with different number systems and perform basic arithmetic operations, explain in detail Boolean algebra operations, basic gates for implementing different Boolean operations, forms of representing Boolean expressions and minimizing them.
CO-2	Have the ability to describe, analyze and build combinational and sequential circuits and explore some of the most widely used combinational circuits
CO-3	Have the ability to describe, analyze and build common synchronous sequential circuits like registers, counters and PLAs and also describe the design procedure and issues involved in asynchronous sequential circuits.
CO-4	Grasp the significance of number systems, Boolean algebra and combinational circuit design and how they might be applied for designing circuits for any given problem.
CO-5	Grasp the significance of sequential circuits, distinguishing them from combinational circuits and the procedure to be used for coming up with sequential circuits (synchronous and asynchronous)
CO-6	Fully appreciate the basics of logic design, digital gates to support basic Boolean operations and the process of designing different circuits for required logical functions that have state and no state.

#### Course-4

Course Code:	A1CIT204
Course Title:	<b>UNIX &amp; Shell Programming</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to write and explain various utilities/commands, supported by UNIX, in order to solve simple and complex problems.
CO-2	Have an ability to write and explain shell scripts using various commands and filters in order to search and modify files.
CO-3	Have an ability to write and explain programs using various types of system calls in order to handle files, directories and processes.
CO-4	Grasp the significance of various utilities and shell scripts supported by UNIX in developing programming solutions.
CO-5	Grasp the significance of and in fact appreciate the role of korn shell programming concepts and file management techniques

CO-6	Fully appreciate the techniques involved in handling files, directories and korn shell programming concepts in UNIX.
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#### Course-5

Course Code:	A1CIT205
Course Title:	<b>Data Communications</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to explain data communication standards, OSI Model and its functionality and services of each layer.
CO-2	Have the ability to explain about transmission media and the switching.
CO-3	Have the ability to explain about various errors detection and correction techniques.
CO-4	Grasp the significance of transmission media and transmission mechanisms that are required to communicate the data.
CO-5	Grasp the significance of applying various error detection and correction techniques in various protocols for effective communication
CO-6	Fully appreciate the conglomeration of equipment's and the underlying transmission principles required for establishing a communication system

#### Course-6

Course Code:	AIMST001
Course Title:	<b>MANAGERIAL ECONOMICS &amp; FINANCIAL ANALYSIS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to understand application of economics in decision making
CO-2	Able to develop and determine cost efficient production through optimization.
CO-3	Able to aware various business environmental factors and the impact.
CO-4	Able to do financial analysis of the firm to know its performance from different parameters.

#### Course-7

Course Code:	A1CIL201
Course Title:	<b>Data Structures Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	students will get hands on exposure to design and implement simple recursive and non-recursive algorithms
CO-2	Students will get hands on exposure to linear and non linear algorithms
CO-3	Students will get hands on exposure to identify and apply the suitable data structures for the given real world problem

#### Course-8

Course Code:	A1CIL202
Course Title:	<b>Unix &amp; Shell Programming Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	An ability to understand the basic features of UNIX and be able to login to a remote machine in order to work with commands in all possible ways with a clear exposure on UNIX file system
CO-2	An ability to write an expression that can be used in conjunction with sed in order to match and remember a particular pattern and also have an exposure of using awk effectively
CO-3	An ability to write a foreground or background shell script that accepts input through command line or through console in order to perform various computations with a use of several operators and also could learn the usage of awk scripts in conjunction with shell.
CO-4	An ability to write C programs with an implementation of system call interface provided by UNIX to simulate the working of basic commands like ls, cp and mv.

## Semester-IV Courses

#### Course-1

Course Code:	A1CIT206
Course Title:	<b>Object Oriented Programming</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	

CO-1	Have the ability to explain benefits of object oriented programming and how and why they make it easy to model real world, explain and discuss the basic language features of JAVA and its design goals.
CO-2	Have the ability to explain and discuss JAVA support of object oriented concepts like abstraction, encapsulation, inheritance and polymorphism and JAVA rich features on exception handling and multi-threading
CO-3	Have the ability to explain and discuss JAVA API library particularly the input/output, utilities and user interface packages and how they can be used to implement rich applications in JAVA.
CO-4	Grasp the significance of object oriented programming and how JAVA makes it easy and facilitates good object oriented programming
CO-5	Grasp the significance of advanced language features like exception handling, multi- threading and event driven programming and appreciate the JAVA API support for using these features of the language.
CO-6	Fully appreciate the art of object oriented programming and have the know-how to utilize the rich API provided by JAVA platform to develop applications of significant complexity with relative ease.

#### Course-2

Course Code:	AICIT207
Course Title:	<b>Operating Systems</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to explain in detail the purpose of the operating system, kernel structure and its interface with application software and to explain in detail the different process management related aspects of typical operating systems
CO-2	Have the ability to describe in detail the different ways and detail in which the memory management and file management services are provided in a typical operating system.
CO-3	Have the ability to describe in detail the I/O management and protection and security services provided by a typical operating system
CO-4	Grasp the significance of importance, role and details of basic operating system structure, process management services and memory management services
CO-5	Grasp the significance of different ways in file system and file management services are provided by operating systems and how operating systems take care of protection and security services.
CO-6	Fully appreciate the role, different alternate ways in which operating systems are implemented and different variations on the common services provided by operating systems.

#### Course-3

Course Code:	AICIT208
Course Title:	<b>Data Base Management Systems</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Will have the ability to explain different model for data organization and basic set theory concepts that lead to entity relationship modeling that is basis for RDBMS along with relational algebra and relational calculus notations.
CO-2	Will have the ability to explain and describe the different query and manipulations constructs available in SQL standard for data querying and manipulation, and how to design a good relational database eliminating redundancies using normalization.
CO-3	Will have the ability to explain and describe the transaction management and recovery aspects of typical commercial RDBMS and how data storage of RDBMS is implemented using external data structures.
CO-4	Grasp the significance of relational data modeling and structured querying on top of typical RDBNMS along with advantages of RDBMS and more specifically of DBMS over file systems.
CO-5	Grasp the significance of structured approach to RDBMS design, the transactional and recovery features of RDBMS and data structures used for external data storage of RDBMS in a file.
CO-6	Full appreciate the need, working and feature set of relational database management systems.

#### Course-4

Course Code:	AICIT209
Course Title:	<b>Computer Architecture</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to explain the concept of stored program computer & the different representations forms for basic data types, ALU & instruction design all the way from macro instruction design to micro instructions to ALU circuit design and different ways of designing control unit.
CO-2	Have the ability to demonstrate complete understanding of algorithms for basic arithmetic operations on different types of data and memory design aspects of computer design.

CO-3	Have the ability to demonstrate sound understanding input/output organization including modes of transfer, advanced processor design aspects like pipelining and vector processing, and multiprocessor design principles
CO-4	Grasp the significance of basic computer organization including designing and building ALU, Instruction Design and corresponding control unit design & algorithms for basic arithmetic operations on all data types.
CO-5	Grasp the significance of memory devices, memory design principles in modern computers, Basic arithmetic operation algorithms and I/O organization of computer, concepts involved in super scalar processor design, and concepts involved and multi- processor design.
CO-6	Fully appreciate the concepts design & development of modern stored program computers.

#### Course-5

Course Code:	A1CIT210
Course Title:	<b>Formal Languages and Automata Theory</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to explain the basic notations and concept of regular expressions and finite automation and other equivalent machines.
CO-2	Have the ability to explain and describe in detail regular languages and their properties, context free grammars and their languages and hierarchy of languages as classified by Chomsky.
CO-3	Have the ability to explain in detail pushdown automation and its equivalence to context free grammars, Turing machines and the whole theory of computability
CO-4	Grasp the significance of regular grammars and all their equivalent automations and expressions and some case studies on where they are useful
CO-5	Grasp the significance of context free grammars, their equivalent automata, Turing machine and their generality and equality to abstract computer and whole theory of computability.
CO-6	Fully appreciate the formal basis for design of any formal language and how we can think of machines that can automatically verify validity of a string against a grammar and the theory behind defining what is computable and what is not.

#### Course-6

Course Code:	A1CIL203
Course Title:	<b>Object Oriented Programming Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Have the ability to explain benefits of object oriented programming and how and why they make it easy to model real world, explain and discuss the basic language features of JAVA and its design goals.
CO-2	Have the ability to explain and discuss JAVA support of object oriented concepts like abstraction, encapsulation, inheritance and polymorphism and JAVA rich features on exception handling and multi-threading
CO-3	Have the ability to explain and discuss JAVA API library particularly the input/output, utilities and user interface packages and how they can be used to implement rich applications in JAVA.
CO-4	Grasp the significance of object oriented programming and how JAVA makes it easy and facilitates good object oriented programming
CO-5	Grasp the significance of advanced language features like exception handling, multi- threading and event driven programming and appreciate the JAVA API support for using these features of the language.

#### Course-7

Course Code:	A1CIL204
Course Title:	<b>Data Base Management Systems Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Will have the ability to explain different model for data organization and basic set theory concepts that lead to entity relationship modeling that is basis for RDBMS along with relational algebra and relational calculus notations.
CO-2	Will have the ability to explain and describe the different query and manipulations constructs available in SQL standard for data querying and manipulation, and how to design a good relational database eliminating redundancies using normalization.
CO-3	Will have the ability to explain and describe the transaction management and recovery aspects of typical commercial RDBMS and how data storage of RDBMS is implemented using external data structures.
CO-4	Grasp the significance of relational data modeling and structured querying on top of typical RDBMS along with advantages of RDBMS and more specifically of DBMS over file systems.

CO-5	Grasp the significance of structured approach to RDBMS design, the transactional and recovery features of RDBMS and data structures used for external data storage of RDBMS in a file.
CO-6	Full appreciate the need, working and feature set of relational database management systems.

## Semester-V Courses

### Course-1

Course Code:	A1CIT211
Course Title:	<b>COMPILER DESIGN</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	To introduce the major concept areas of language translation and compiler design
CO-2	To develop an awareness of the function and complexity of compilers.
CO-3	To provide practical, hands on experience in compiler design
CO-4	Identify the similarities and differences among various parsing techniques and grammar transformation techniques

### Course-2

Course Code:	A1CIT212
Course Title:	<b>COMPUTER NETWORKS</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Independently understand basic computer network technology.
CO-2	Identify the different types of network topologies and technology
CO-3	Enumerate the layers of OSI model and TCP/IP.
CO-4	Understand the addressing mechanism and networking Frame structure.

### Course-3

Course Code:	A1CIT213
Course Title:	<b>MICRO PROCESSORS &amp; INTERFACING</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	The student will learn the internal organization of some popular microprocessors/microcontrollers
CO-2	The student will learn hardware and software interaction and integration.
CO-3	Have the ability to program using 8086 assembly language.
CO-4	Have the ability to interface peripheral devices with microprocessor.
CO-5	Full appreciate the architecture, instructions, and interfacing methods and design 8086 based microprocessor systems.

### Course-4

Course Code:	A1CIT214
Course Title:	<b>WEB TECHNOLOGIES</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Ability to integrate the MYSQL and PHP to develop an application.
CO-2	Ability to use open source languages and open source databases like PHP and MYSQL to develop the application
CO-3	Create web pages using Xml and CSS techniques and building web pages
CO-4	Ability to fully appreciate the art of open source software language's and software's. And develop projects optimally using the full feature set of open source software's.

### Course-5

Course Code:	A1CIL205
Course Title:	<b>Compiler Design &amp; Computer Networks Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	To apply the knowledge of lex tool & yacc tool to develop a scanner & parser
CO-2	To design & implement a front end of the compiler.
CO-3	To develop program for implementing symbol table and for solving parser problems.
CO-4	To develop basic understanding of framing method.
CO-5	To compute the shortest paths
CO-6	To use the packet tracer to simulate various networks.

## Semester-VI Courses

Course-1	
Course Code:	A1CIT215
Course Title:	<b>Design &amp; Analysis of Algorithms</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the data structures and analyze worst-case running times of algorithms using asymptotic analysis
CO-2	Describe the divide-and-conquer, dynamic, greedy paradigms and explain when an algorithmic design situation calls for it.
CO-3	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components, and analyze them
CO-4	Explain the different ways to analyze randomized algorithms (expected running time, probability of error). Recite algorithms that employ randomization. Explain the difference between a randomized algorithm and an algorithm with probabilistic inputs
CO-5	Analyze randomized algorithms. Employ indicator random variables and linearity of expectation to perform the analyses. Recite analyses of algorithms that employ this method of analysis
CO-6	

Course-2	
Course Code:	A1CIT216
Course Title:	<b>SOFTWARE ENGINEERING</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will have the ability to select most appropriate process model for the given project
CO-2	Students will have the ability to author software requirements specification document which includes gathering, analyzing, validating requirements and to arrive at software architecture and design using various design concepts and architectural styles and patterns
CO-3	Students will have the ability to design the software from object oriented perspective, arrive at User Interface design, and plan various test strategies and process & product metrics based on requirements and design.
CO-4	Students will have the ability to understand software development phase wise metrics, identify, estimate and manage risks involved in the project and maintain the quality of the software product to its best.
CO-5	Students will grasp the significance of Software Quality Assurance (Reviews, Testing, Metricsetc) and Risk Reduction activities
CO-6	Students will fully appreciate end to end software engineering processes and activities.

Course-3	
Course Code:	A1CIT217
Course Title:	<b>Object Oriented Analysis and Design &amp; Design Patterns</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Identify the purpose and methods of use of common object-oriented design patterns
CO-2	Select and apply these patterns in their own designs for simple programs
CO-3	Represent the data dependencies of a simple program using UML
CO-4	Represent user and programmatic interactions using UML
CO-5	Create design documentation outlining the testable and complete design of a simple program
CO-6	Produce plans to limit risks specific to software designed for use in a particular context.

## Semester-VII Courses

Course-1	
Course Code:	A1CIT218
Course Title:	<b>DESIGN OF UNIX OPERATING SYSTEM</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Work confidently in Unix environment
CO-2	Write shell scripts to automate various tasks

CO-3	Master the basics of unix administration
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#### Course-2

Course Code:	A1CIL209
Course Title:	<b>OOAD &amp; DP Lab</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Understand Object Oriented Software Development Process
CO-2	Gain exposure to Object Oriented Methodologies & UML Diagrams
CO-3	To apply Object Oriented Analysis Processes for projects

#### Course-3

Course Code:	A1CIL210
Course Title:	<b>OPERATING SYSTEMS LAB</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	To provide an understanding of the design aspects of operating system
CO-2	To learn the fundamentals of shell scripting/programming
CO-3	To provide an understanding of basic LINUX environment

### Semester-VIII Courses

#### Course-1

Course Code:	A1CIP601
Course Title:	Directed Study
Theory / Lab:	Project
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Demonstrate the ability of self-learning that leads to continuous and life long learning needs.
CO-2	Demonstrate team work and professional ethics.
CO-3	Conduct study on modern tool usage for implementing a project idea.
CO-4	Develop communication skills and problem solving skills.
CO-5	Identify citizen centric problem that can be addressed with the skill set earned in the course.

#### Course-2

Course Code:	A1CIP602
Course Title:	Project
Theory / Lab:	Project work
L-T-P-C:	0-0-0-8
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

### Elective Courses

#### Course-1

Course Code:	A1CIT311
Course Title:	<b>DATA WAREHOUSING &amp; DATA MINING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand why there is a need for data warehouse in addition to traditional operational database systems
CO-2	Identify components in typical data warehouse architectures
CO-3	Design a data warehouse and understand the process required to construct One
CO-4	Understand why there is a need for data mining and in what ways it is different from traditional statistical techniques
CO-5	Understand the details of different algorithms made available by popular commercial data mining software
CO-6	Solve real data mining problems by using the right tools to find interesting Patterns

<b>Course-2</b>	
Course Code:	A1CIT322
Course Title:	<b>ROUTING &amp; SWITCHING CONCEPTS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Ability to understand the difference between OSI model and TCP/IP protocol suite.
CO-2	Ability to choose a particular routing protocol (static or dynamic) and be able to configure the routers.
CO-3	Ability to understand the role of switch at layer 2 and be able to configure, switch port security, VLAN's, VTP etc.
CO-4	Ability to design networks and configure the intermediate devices along with basic security features.
CO-5	Fully appreciate the role of a network engineer in designing small to medium scale networks.

<b>Course-3</b>	
Course Code:	A1CIT332
Course Title:	<b>SERVICE ORIENTED ARCHITECTURE</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Should be able to explain in detail the basic paradigm and merits of service oriented architecture.
CO-2	Should be able to explain the considerations and circumstances for building applications using service oriented architecture.
CO-3	Should be able to fully understand the concept of enterprise service bus
CO-4	Should be able to appreciate the design concepts, and common services involved in design of SOA driven applications
CO-5	Should have a reasonable grasp of all the technologies involved in developing service oriented architecture applications

<b>Course-4</b>	
Course Code:	A1CIT316
Course Title:	<b>DATA SCIENCES &amp; ANALYTICS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Define and explain the key concepts and models relevant to data science, including data cleaning and integration, data-intensive distributed computing, data mining algorithms, and data visualization.
CO-2	Design, implement, and evaluate the core algorithms underlying an end-to-end data science workflow, including the experimental design, data collection, mining, analysis, and presentation of information derived from large datasets.
CO-3	Apply "best practices" in data science, including facility with modern tools.

<b>Course-5</b>	
Course Code:	A1CIT321
Course Title:	<b>MOBILE COMPUTING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Able to think and develop new mobile application
CO-2	Able to take any new technical issue related to this new paradigm and come up with a solution(s).
CO-3	Able to develop new ad hoc network applications and/or algorithms/protocols
CO-4	Able to understand & develop any existing or new protocol related to mobile environment.

<b>Course-6</b>	
Course Code:	A1CIT331
Course Title:	<b>MIDDLEWARE TECHNOLOGIES</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Describe the benefits and architecture of Client Server Technology
CO-2	Understand the concepts of CORBA and RMI technologies
CO-3	Apply the components of C# .Net technology to given applications
CO-4	Classify the architecture of CORBA and mapping the CORBA with existing
CO-5	Programming languages like Java

<b>Course-7</b>	
Course Code:	A1CIT344
Course Title:	<b>COMPUTER GRAPHICS</b>

Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Explain the Computer Graphics display technologies
CO-2	Analyse the basic output primitive drawing algorithms along with 2D transformation concepts to display the objects
CO-3	Apply the polygon filling algorithms to fill polygons with required colour
CO-4	Derive the projection transformations and explain the 3D object representation models

#### Course-8

Course Code:	A1CIT332
Course Title:	<b>SERVICE ORIENTED ARCHITECTURE</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Should be able to explain in detail the basic paradigm and merits of service oriented architecture.
CO-2	Should be able to explain the considerations and circumstances for building applications using service oriented architecture
CO-3	Should be able to fully understand the concept of enterprise service bus
CO-4	Should be able to appreciate the design concepts, and common services involved in design of SOA driven applications
CO-5	Should have a reasonable grasp of all the technologies involved in developing service oriented architecture applications

#### Course-9

Course Code:	A1CIT312
Course Title:	<b>GRID &amp; CLUSTER COMPUTING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to appreciate the necessity of grid computing and thus its evaluation
CO-2	Able to understand where the grid computing could be effectively utilized by illustrations of applications of grid computing
CO-3	Able to select a proper technology and toolkit for using grid computing

#### Course-10

Course Code:	A1CIT325
Course Title:	<b>FIREWALL &amp; VPN</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand Foundations of Network Security
CO-2	Network Security Implementation and management
CO-3	VPN technologies and VPN Management
CO-4	Firewall Implementation

#### Course-1

Course Code:	A1CIT336
Course Title:	<b>CLOUD &amp; UTILITY COMPUTING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understanding the key dimensions of the challenge of Cloud Computing
CO-2	Assessment of the economics , financial, and technological implications for selecting cloud computing for own organization
CO-3	Assessing the financial, technological, and organizational capacity of employer for actively initiating and installing cloud-based applications
CO-4	Assessment of own organizations' needs for capacity building and training in cloud computing-related IT areas

#### Course-2

Course Code:	A1CIT345
Course Title:	<b>PARALLEL PROGRAMMING &amp; ALGORITHMS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand the concepts of parallel programming and algorithms

CO-2	Design and prove correctness and analyze the computational complexity of sequential algorithms
CO-3	Describe and use basic sequential algorithms

#### Course-3

Course Code:	A1CIT332
Course Title:	<b>SERVICE ORIENTED ARCHITECTURE</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Should be able to explain in detail the basic paradigm and merits of service oriented architecture.
CO-2	Should be able to explain the considerations and circumstances for building applications using service oriented architecture.
CO-3	Should be able to fully understand the concept of enterprise service bus.
CO-4	Should be able to appreciate the design concepts, and common services involved in design of SOA driven applications.
CO-5	Should have a reasonable grasp of all the technologies involved in developing service oriented architecture applications

#### Course-4

Course Code:	A1CIT315
Course Title:	<b>NEURAL NETWORKS &amp; SOFT COMPUTING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify and describe soft computing techniques and their roles in building intelligent machines.
CO-2	Recognize the feasibility of applying a soft computing methodology for a particular problem.
CO-3	Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.

#### Course-5

Course Code:	A1CIT323
Course Title:	<b>ADHOC NETWORKS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Describe the unique issues in ad-hoc networks
CO-2	Describe current technology trends for the implementation and deployment of wireless ad-hoc networks
CO-3	Discuss the challenges in designing MAC, routing and transport protocols for wireless adhoc networks

#### Course-6

Course Code:	A1CIT333
Course Title:	<b>ENTERPRISE JAVA BEANS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Demonstrate understanding the concepts of Java Bean Component model.
CO-2	Integrate Servlets, JSP and JDBC and build a web application
CO-3	Build Enterprise Applications using Session Bean, Entity Bean and MDB

#### Course-7

Course Code:	A1CIT348
Course Title:	<b>DIGITAL FORENSICS &amp; INVESTIGATIONS</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Analyze and carve image files both logical and physical
CO-2	Explain guidelines for investigation reporting
CO-3	Explain anti-forensic methods/tools and their use

#### Course-8

Course Code:	A1CIT311
Course Title:	<b>DATA WAREHOUSING &amp; DATA MINING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand why there is a need for data warehouse in addition to traditional operational database systems

CO-2	Identify components in typical data warehouse architectures
CO-3	Design a data warehouse and understand the process required to construct One
CO-4	Understand why there is a need for data mining and in what ways it is different from traditional statistical techniques
CO-5	Understand the details of different algorithms made available by popular commercial data mining software
CO-6	Solve real data mining problems by using the right tools to find interesting Patterns

#### Course-9

Course Code:	A1CIT314
Course Title:	<b>SEMANTIC WEB</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<u>Course Outcomes:</u>	
CO-1	Demonstrate knowledge and be able to explain the three different —namedl generations of the web.
CO-2	Demonstrate the ability to participate materially in projects that develop programs relating to Web applications and the analysis of Web data.
CO-3	Be able to understand and explain the key aspects of Web architecture and why these are important to the continued functioning of the World Wide Web.
CO-4	Be able to analyze and explain how technical changes affect the social aspects of Web-based computing
CO-5	Be able to develop —linked dataI applications using Semantic Web technologies

#### Course-10

Course Code:	A1CIT326
Course Title:	<b>PENETRATION TESTING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<u>Course Outcomes:</u>	
CO-1	Skills student will develop in this course Students will learn how to apply knowledge of engineering to security evaluations, design and conduct security assessment experiments
CO-2	Analyze and interpret the resulting data, understand professional and ethical responsibility, communicate effectively, understand the impact of security practices in a global and societal context
CO-3	Recognize the need for life-long learning in the quickly changing cybersecurity environment, develop knowledge of contemporary cybersecurity issues
CO-4	Use techniques, skills and modern engineering tools necessary for computer security engineering practice

#### Course-11

Course Code:	A1CIT335
Course Title:	<b>ENTERPRISE RESOURCE PLANNING</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<u>Course Outcomes:</u>	
CO-1	Examine systematically the planning mechanisms in an enterprise, and identify all components in an ERP system and the relationships among the components
CO-2	Understand production planning in an ERP system, and systematically develop plans for an enterprise
CO-3	Use methods to determine the correct purchasing quantity and right time to buy an item, and apply these methods to material management
CO-4	Understand the difficulties of a manufacturing execution system, select a suitable performance measure for different objectives, and apply priority rules to shop floor control.

## M.Tech. (CNIS)

### Semester-I Courses

#### Course-1

Course Code:	A1CNT101
Course Title:	<b>Advanced Computer Networks</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
<u>Course Outcomes:</u>	
CO-1	Ability to understand the difference between OSI model and TCP/IP protocol suite.
CO-2	2. Ability to identify IPv4 address classes, and also be able to perform sub-netting and supernetting.

CO-3	3. Ability to choose a particular routing protocol (static or dynamic) and be able to configure the routers.
CO-4	4. Ability to understand the role of switch at layer 2 and be able to configure, switch port security, VLAN's, VTP etc.
CO-5	5. Ability to explain IPv6 addressing scheme and understand the concepts of WAN protocols.
CO-6	6. Ability to design networks and configure the intermediate devices along with basic security features.
CO-7	7. Fully appreciate the role of a network engineer in designing small to medium scale networks.

#### Course-2

<b>Course Code:</b>	<b>A1CST101</b>
<b>Course Title:</b>	Advanced Data Structures 3 - 2 4
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-2-4
<b>Course Outcomes:</b>	
CO-1	Have the ability to understand data structure, notations. Be able to implement linked lists, stacks and queues.
CO-2	2. Have the ability to grasp the significance of Queues and Trees.
CO-3	3. Have the ability to design priority queues, and understand various sorting techniques.
CO-4	4. Have the ability to demonstrate the Hashing Techniques.
CO-5	5. Have the ability to differentiate greedy and divide and conquer algorithms and applications.
CO-6	6. Fully appreciate the elements and components of data structures and their applications.

#### Course-3

<b>Course Code:</b>	<b>A1CST102</b>
<b>Course Title:</b>	OOP Using JAVA
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-2-4
<b>Course Outcomes:</b>	
CO-1	Have the ability to understand the basic concepts of Object Oriented paradigm.
CO-2	2. Have the ability to Understand and apply Inheritance, polymorphism, and interfaces.
CO-3	3. Have the ability to grasp the significance if handling exceptions and understand the benefits of multithreading.
CO-4	4. Have the ability define, import and make use of packages.
CO-5	5. Have the ability to handle events, design basic and advanced User Interfaces, and applets.
CO-6	6. Fully appreciate the advantages of Object Oriented Programming and use Java to implement simple applications.

#### Course-4

<b>Course Code:</b>	<b>A1CNL101</b>
<b>Course Title:</b>	<b>Networking Design Lab - I</b>
<b>Theory / Lab:</b>	L
<b>L-T-P-C:</b>	0-0-3-2
<b>Lab Outcomes:</b>	
CO-1	Have the ability to identify IPv4 addresses classes, perform sub-netting and Supernetting.
CO-2	2. Have the ability to configure static routing in a router.
CO-3	3. Have the ability to configure RIP, EIGRP.
CO-4	4. Have the ability to configure OSPF routing.
CO-5	5. Have the ability to configure switch for basic security and VLAN, VTP.
CO-6	6. Have the ability to configure standard and extended ACL's
CO-7	7. Fully appreciate the role of network engineer in establishing a small to medium sized networks.

<b>Course Code:</b>	<b>A1CNT202</b>
<b>Course Title:</b>	<b>SENSOR AND ADHOC NETWORKS</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-0-3
<b>Lab Outcomes:</b>	
CO-1	Have the knowledge and understanding of MANETS, characteristics, applications and challenges.
CO-2	2. Have the ability to comprehend routing algorithms and their pros and cons.
CO-3	3. Have the knowledge and understanding of wireless sensor networks, applications and data retrieval.
CO-4	4. Have the ability to understand various security mechanisms in Ad Hoc networks.

CO-5	5. Fully appreciate the role of Mobile Adhoc networks, and wireless sensor networks in real world applications.
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<b>Course Code:</b>	<b>AICNT204</b>
<b>Course Title:</b>	<b>Network Perimeter Security</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Ability to understand the basic concepts of information security management.
CO-2	Ability to appreciate the need for Information security planning in the project development life cycle.
CO-3	Ability to grasp the significance of contingency planning and security policy.
CO-4	Ability to demonstrate the knowledge of security management models and performance parameters.
CO-5	Ability to appreciate the need for Risk management and ability to perform risk assessment.
CO-6	Ability to know the components of personnel and perimeter security.
CO-7	Ability to demonstrate the knowledge of standards like ISO 27001

## Semester-II Courses

### Course-1

<b>Course Code:</b>	<b>AICST104</b>
<b>Course Title:</b>	<b>Relational Data Base Management Systems</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	Have the ability to explain why to choose a database system instead of simply storing data in operating system file ,in terms of three tier architecture, levels of abstraction, creation of database with various types of database languages and data independence and to explain the various database design steps and how to develop an entity-relationship model for different database relations with extended features.
CO-2	Have the ability to describe various queries for creating and modifying on the relations using SQL, applying integrity and referential constraints on the relations and Have the ability to explain functional dependencies, schema refinement, refining by decomposition and refining the problems using various normal forms.
CO-3	Have the ability to describe ACID properties, recovery systems ,backup systems, file organization and indexing and B+ Trees.
CO-4	Grasp the concepts of basic Er-models, Relational algebra, Relational Calculas, SQL Queries, different normal forms.
CO-5	Grasp the concepts of transactions and how concurrency control and crash recovery can be achieved by applying various locking techniques and recovery algorithms and how to organize the files in tree structured and hash based indexed structure using ISAM, B+ trees and static and dynamic hashing techniques.
CO-6	Fully appreciate the techniques involved in a database system and use variety of tools to implement them in order to study, learn and develop much more database applications/projects.

### Course-2

<b>Course Code:</b>	<b>AICST207</b>
<b>Course Title:</b>	<b>Web Technologies and Tools</b>
Theory / Lab:	T
L-T-P-C:	3-0-2-4
<b>Course Outcomes:</b>	
CO-1	Ability to understand the importance of open source software and open source operating systems. Able to understand the linux operating system kernel and writing the scheduling programs in linux OS.
CO-2	Ability to use open source languages and open source databases like PHP and MYSQL to develop the application.
CO-3	Ability to write the python scripts and integrates the MYSQL and PHP to develop an application.
CO-4	have the ability to write the perl scripts and develop an application using the PERL subroutines, packages and modules.
CO-5	Ability to grasp the significance of open source software importance and dealing with operating system like linux and handling the schedulers in linux, writing the web application using the PHP and MYSQL.
CO-6	Ability to grasp the significance of open source scripting languages like PERL and PYTHON. and library functions in PYTHON for dealing with files in writing more complicated programs.
CO-7	Ability to fully appreciate the art of open source software language's and software's. And develop projects optimally using the full feature set of open source software's.

### Course-3

<b>Course Code:</b>	<b>AICST106</b>
<b>Course Title:</b>	<b>Theory of Operating Systems</b>

Theory / Lab:	T
L-T-P-C:	3-0-2-4
Course Outcomes:	
CO-1	Have the ability to demonstrate the fundamental issues in Operating Systems structure and how the process is managed and how the process are scheduled.
CO-2	Have the ability to demonstrate the various synchronization techniques ,multithreading issues, and explain the various issues leading to deadlock and how to handle deadlock
CO-3	Have the ability to explain the various memory management techniques
CO-4	Grasp the significance of various design issues of Operating systems and the usage of various algorithms in Process scheduling, multithreading techniques.
CO-5	Grasp the significance of concepts of critical sections, leading to deadlocks and how data is managed on mass storage devices and memory management techniques.
CO-6	Fully appreciate the various issues related to Operating systems design and how to manage the various I/O devices, memory, processes, and files.

#### Course-4

<b>Course Code:</b>	<b>AICNT210</b>
<b>Course Title:</b>	<b>Information Security Management and Standards</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Ability to understand the basic concepts of information security management.
CO-2	Ability to appreciate the need for Information security planning in the project development life cycle.
CO-3	Ability to grasp the significance of contingency planning and security policy.
CO-4	Ability to demonstrate the knowledge of security management models and performance parameters.
CO-5	Ability to appreciate the need for Risk management and ability to perform risk assessment.
CO-6	Ability to know the components of personnel and perimeter security.
CO-7	Ability to demonstrate the knowledge of standards like ISO 27001

#### Course-5

<b>Course Code:</b>	<b>AICNL102</b>
<b>Course Title:</b>	<b>Networking Design Lab - II</b>
Theory / Lab:	L
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	1. Have the ability to understand the need for penetration testing and ethical hacking and be able to appreciate the basic terminology and jargon of ethical hacking and phases.
CO-2	2. Have the ability to perform foot printing and reconnaissance using various tools and also able to grasp how to defend against the same.
CO-3	3. Have the ability to understand and know how sniffers will work and how to perform sniffing and also have the ability to use tools for gaining access.
CO-4	4. Have the ability to understand the consequences of DoS and DDoS attacks and also know how to execute and defend against such attacks.
CO-5	5. Have the ability to grasp the significance of session hijacking and its procedure and defense strategies.
CO-6	6. Have the ability to explore the vulnerabilities of web applications and web servers and be able to perform SQL injection attacks.

<b>Course Code:</b>	<b>AICNT207</b>
<b>Course Title:</b>	<b>Penetration Testing &amp; Network Defense</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	1. Have the ability to understand the need for penetration testing and ethical hacking and be able to appreciate the basic terminology and jargon of ethical hacking and phases.
CO-2	2. Have the ability to perform foot printing and reconnaissance using various tools and also able to grasp how to defend against the same.
CO-3	3. Have the ability to understand and know how sniffers will work and how to perform sniffing and also have the ability to use tools for gaining access.
CO-4	4. Have the ability to understand the consequences of DoS and DDoS attacks and also know how to execute and defend against such attacks.
CO-5	5. Have the ability to grasp the significance of session hijacking and its procedure and defense strategies.
CO-6	6. Have the ability to explore the vulnerabilities of web applications and web servers and be able to perform SQL injection attacks.
CO-7	7. Have the ability to fully appreciate the different phases of ethical hacking to perform penetration testing at systems and networks level.

<b>Course Code:</b>	<b>A1CST307</b>
<b>Course Title:</b>	<b>Distributed Systems</b>
Theory / Lab:	T
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Students have the ability to explain resource sharing in distributed systems and different system models used to construct Distributed system network between systems
CO-2	Students have the ability to explain Distributed Objects and Remote Invocation
CO-3	Students have the ability to explain function of distributed file systems
CO-4	Students have the ability to explain Distributed Transaction management, Coordination and Agreement between distributed processes
CO-5	Students can explain what a distributed system is, why one would design a system as a distributed system, and what the desired properties of such systems are.
CO-6	Students can build distributed system software using RMI
CO-7	Students can design a distributed system that fulfills requirements with regards to key distributed systems properties (such as scalability, transparency, etc)

## Semester-III Courses

### Course-1

<b>Course Code:</b>	<b>A1CSP601</b>
<b>Course Title:</b>	<b>Research Methodologies</b>
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
<b>Course Outcomes:</b>	
CO-1	Demonstrate the ability to identify complex problem domain.
CO-2	Ability to review research literature.
CO-3	Use research-based knowledge and research methods including design of experiments.
CO-4	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
CO-5	Comprehend and write effective research reports and/or papers.

### Course-2

<b>Course Code:</b>	<b>A1CSP602</b>
<b>Course Title:</b>	<b>Comprehensive Viva</b>
Theory / Lab:	Viva
L-T-P-C:	0-0-0-2
<b>Course Outcomes:</b>	
CO-1	Use acquired knowledge and be able to analyze and interpret data, and synthesis of the information to provide valid conclusions.
CO-2	Apply reasoning informed by the contextual knowledge
CO-3	Communicate effectively on complex engineering problems
CO-4	Demonstrate knowledge and understanding of the select specialization.

### Course-3

<b>Course Code:</b>	<b>A1CSP603</b>
<b>Course Title:</b>	<b>Pre-requisite Study</b>
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
<b>Course Outcomes:</b>	
CO-1	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools
CO-2	Function effectively as an individual, ability to self-learning.
CO-3	Demonstrate the ability to make effective presentations
CO-4	Identify, formulate, review research literature, and analyze complex engineering problems.

### Course-4

<b>Course Code:</b>	<b>A1CSP604</b>
<b>Course Title:</b>	<b>Seminar</b>
Theory / Lab:	Seminar
L-T-P-C:	0-0-0-2
<b>Course Outcomes:</b>	
CO-1	Use acquired knowledge and be able to analyze and interpret data, and synthesis of the information to provide valid conclusions.
CO-2	Communicate effectively on complex engineering problems

CO-3	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
CO-4	Comprehend and write effective reports and design documentation
CO-5	Ability to engage in independent and life-long learning in the broadest context of technological change.

#### Course-5

<b>Course Code:</b>	<b>A1CSP605</b>
<b>Course Title:</b>	<b>Project</b>
Theory / Lab:	Project work
L-T-P-C:	0-0-0-8
<b>Course Outcomes:</b>	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

## IV Semester Courses

#### Course-1

<b>Course Code:</b>	<b>A1CSP606</b>
<b>Course Title:</b>	<b>Project</b>
Theory / Lab:	Project work
L-T-P-C:	0-0-0-18
<b>Course Outcomes:</b>	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

## M.Tech. (CSE)

### Semester-I Courses

#### Course-1

<b>Course Code:</b>	<b>A1CNT101</b>
<b>Course Title:</b>	<b>Advanced Computer Networks</b>
Theory / Lab:	T
L-T-P-C:	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	Ability to understand the difference between OSI model and TCP/IP protocol suite.
CO-2	2. Ability to identify IPv4 address classes, and also be able to perform sub-netting and supernetting.
CO-3	3. Ability to choose a particular routing protocol (static or dynamic) and be able to configure the routers.
CO-4	4. Ability to understand the role of switch at layer 2 and be able to configure, switch port security, VLAN's, VTP etc.
CO-5	5. Ability to explain IPv6 addressing scheme and understand the concepts of WAN protocols.
CO-6	6. Ability to design networks and configure the intermediate devices along with basic security features.
CO-7	7. Fully appreciate the role of a network engineer in designing small to medium scale networks.

#### Course-2

<b>Course Code:</b>	<b>A1CST101</b>
<b>Course Title:</b>	<b>Advanced Data Structures</b>
Theory / Lab:	T
L-T-P-C:	3-0-2-4
<b>Course Outcomes:</b>	
CO-1	Have the ability to understand data structure, notations. Be able to implement linked lists, stacks and queues.
CO-2	2. Have the ability to grasp the significance of Queues and Trees.

CO-3	3. Have the ability to design priority queues, and understand various sorting techniques.
CO-4	4. Have the ability to demonstrate the Hashing Techniques.
CO-5	5. Have the ability to differentiate greedy and divide and conquer algorithms and applications.
CO-6	6. Fully appreciate the elements and components of data structures and their applications.

### Course-3

<b>Course Code:</b>	<b>AICST102</b>
<b>Course Title:</b>	<b>OOP Using JAVA</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-2-4
<b>Course Outcomes:</b>	
CO-1	1. Have the ability to understand the basic concepts of Object Oriented paradigm.
	2. Have the ability to Understand and apply Inheritance, polymorphism, and interfaces.
CO-2	3. Have the ability to grasp the significance if handling exceptions and understand the
CO-3	benefits of multithreading.
CO-4	4. Have the ability define, import and make use of packages.
CO-5	5. Have the ability to handle events, design basic and advanced User Interfaces, and applets.
CO-6	6. Fully appreciate the advantages of Object Oriented Programming and use Java to implement simple applications.

### Course-4

<b>Course Code:</b>	<b>AICST103</b>
<b>Course Title:</b>	<b>Software Engineering Practices</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	1. Have the ability to Understand security threats, attacks, mechanisms.
CO-2	2. Have the ability to understand the symmetric key cryptography and related algorithms.
CO-3	3. Have the ability to understand the asymmetric key cryptography and related algorithms.
CO-4	4. Fully appreciate the applications of symmetric Cryptography.
CO-5	5. Fully appreciate the applications of asymmetric Cryptography.
CO-6	6. Really understand the role of cryptographic algorithms and applications for information security.

### Course-5

<b>Course Code:</b>	<b>AICSL101</b>
<b>Course Title:</b>	<b>Software Design Lab - I</b>
<b>Theory / Lab:</b>	L
<b>L-T-P-C:</b>	0-0-3-2
<b>Lab Outcomes:</b>	
CO-1	1. Have the ability to understand the basic concepts of Object Oriented paradigm.
	2. Have the ability to Understand and apply Inheritance, polymorphism, and interfaces.
CO-2	3. Have the ability to grasp the significance if handling exceptions and understand the
CO-3	benefits of multithreading.
CO-4	4. Have the ability define, import and make use of packages.
CO-5	5. Have the ability to handle events, design basic and advanced User Interfaces, and applets.

<b>Course Code:</b>	<b>AICNT202</b>
<b>Course Title:</b>	<b>SENSOR AND ADHOC NETWORKS</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-0-3
<b>Lab Outcomes:</b>	
CO-1	1. Have the knowledge and understanding of MANETS, characteristics, applications and challenges.
CO-2	2. Have the ability to comprehend routing algorithms and their pros and cons.
CO-3	3. Have the knowledge and understanding of wireless sensor networks, applications and data retrieval.
CO-4	4. Have the ability to understand various security mechanisms in Ad Hoc networks.
CO-5	5. Fully appreciate the role of Mobile Adhoc networks, and wireless sensor networks in real world applications.

<b>Course Code:</b>	<b>AICNT204</b>
<b>Course Title:</b>	<b>Network Perimeter Security</b>
<b>Theory / Lab:</b>	T

L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Ability to understand the basic concepts of information security management.
CO-2	Ability to appreciate the need for Information security planning in the project development life cycle.
CO-3	Ability to grasp the significance of contingency planning and security policy.
CO-4	Ability to demonstrate the knowledge of security management models and performance parameters.
CO-5	Ability to appreciate the need for Risk management and ability to perform risk assessment.
CO-6	Ability to know the components of personnel and perimeter security.
CO-7	Ability to demonstrate the knowledge of standards like ISO 27001

## Semester-II Courses

Course-1	
Course Code:	AICST104
Course Title:	Relational Data Base Management Systems
Theory / Lab:	T
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to explain why to choose a database system instead of simply storing data in operating system file ,in terms of three tier architecture, levels of abstraction, creation of database with various types of database languages and data independence and to explain the various database design steps and how to develop an entity-relationship model for different database relations with extended features.
CO-2	Have the ability to describe various queries for creating and modifying on the relations using SQL, applying integrity and referential constraints on the relations and Have the ability to explain functional dependencies, schema refinement, refining by decomposition and refining the problems using various normal forms.
CO-3	Have the ability to describe ACID properties, recovery systems ,backup systems, file organization and indexing and B+ Trees.
CO-4	Grasp the concepts of basic Er-models, Relational algebra, Relational Calculas, SQL Queries, different normal forms.
CO-5	Grasp the concepts of transactions and how concurrency control and crash recovery can be achieved by applying various locking techniques and recovery algorithms and how to organize the files in tree structured and hash based indexed structure using ISAM, B+ trees and static and dynamic hashing techniques.
CO-6	Fully appreciate the techniques involved in a database system and use variety of tools to implement them in order to study, learn and develop much more database applications/projects.

Course-2	
Course Code:	AICST207
Course Title:	Web Technologies and Tools
Theory / Lab:	T
L-T-P-C:	3-0-2-4
Course Outcomes:	
CO-1	Ability to understand the importance of open source software and open source operating systems. Able to understand the linux operating system kernel and writing the scheduling programs in linux OS.
CO-2	Ability to use open source languages and open source databases like PHP and MYSQL to develop the application.
CO-3	Ability to write the python scripts and integrates the MYSQL and PHP to develop an application.
CO-4	have the ability to write the perl scripts and develop an application using the PERL subroutines, packages and modules.
CO-5	Ability to grasp the significance of open source software importance and dealing with operating system like linux and handling the schedulers in linux, writing the web application using the PHP and MYSQL.
CO-6	Ability to grasp the significance of open source scripting languages like PERL and PYTHON. and library functions in PYTHON for dealing with files in writing more complicated programs.
CO-7	Ability to fully appreciate the art of open source software language's and software's. And develop projects optimally using the full feature set of open source software's.

Course-3	
Course Code:	AICST106
Course Title:	Theory of Operating Systems
Theory / Lab:	T
L-T-P-C:	3-0-2-4
Course Outcomes:	
CO-1	Have the ability to demonstrate the fundamental issues in Operating Systems structure and how the process is managed and how the process are scheduled.

CO-2	Have the ability to demonstrate the various synchronization techniques ,multithreading issues, and explain the various issues leading to deadlock and how to handle deadlock
CO-3	Have the ability to explain the various memory management techniques
CO-4	Grasp the significance of various design issues of Operating systems and the usage of various algorithms in Process scheduling, multithreading techniques.
CO-5	Grasp the significance of concepts of critical sections, leading to deadlocks and how data is managed on mass storage devices and memory management techniques.
CO-6	Fully appreciate the various issues related to Operating systems design and how to manage the various I/O devices, memory, processes, and files.

#### Course-4

<b>Course Code:</b>	<b>A1CST107</b>
<b>Course Title:</b>	<b>Object Oriented Analysis and Design and Design Patterns</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	CO1: Ability to understand a system described in UML diagrams
CO-2	CO2: Ability to draw different UML diagrams of a given project.
CO-3	CO3: Ability to recognize design patterns used in existing systems.
CO-4	CO4: Grasp the significance of class and object diagrams, behavioral & use case diagrams for a particular problem.
CO-5	CO5: Grasp the significance of a given pattern and identifying its related patterns.
CO-6	CO6: fully appreciate the art of using design patterns in a new project and document the design decisions using UML diagrams.

#### Course-5

<b>Course Code:</b>	<b>A1CSL102</b>
<b>Course Title:</b>	<b>Software Design Lab - II</b>
<b>Theory / Lab:</b>	L
<b>L-T-P-C:</b>	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Ability to understand the importance of open source software and open source operating systems. Able to understand the linux operating system kernel and writing the scheduling programs in linux OS.
CO-2	Ability to use open source languages and open source databases like PHP and MYSQL to develop the application.
CO-3	Ability to write the python scripts and integrates the MYSQL and PHP to develop an application.
CO-4	have the ability to write the perl scripts and develop an application using the PERL subroutines, packages and modules.
CO-5	Ability to grasp the significance of open source software importance and dealing with operating system like linux and handling the schedulers in linux, writing the web application using the PHP and MYSQL.
CO-6	Ability to grasp the significance of open source scripting languages like PERL and PYTHON. and library functions in PYTHON for dealing with files in writing more complicated programs.

<b>Course Code:</b>	<b>A1CST204</b>
<b>Course Title:</b>	<b>Data Mining</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	1. Have the ability to describe key areas such as OLAP (that stands for On Line Analytical Processing) Design, Data Warehousing (DW) and Data Mining (DM) and various tasks in Data preprocessing
CO-2	2. Have the ability to provide an overview of most common tasks and application areas of data warehousing and classification
CO-3	3. Have the ability to provide an overview of Association and Cluster Analysis
CO-4	4. Grasp the idea and implementation of most common techniques used in Datamining and Warehousing
CO-5	5. Grasp the necessity for building and evaluating predictive and descriptive models
CO-6	Fully appreciate the necessary background and skills to turn available data into valuable and useful information

<b>Course Code:</b>	<b>A1CST207</b>
<b>Course Title:</b>	<b>Distributed Systems</b>
<b>Theory / Lab:</b>	T
<b>L-T-P-C:</b>	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Students have the ability to explain resource sharing in distributed systems and different system models used to construct Distributed system network between systems
CO-2	Students have the ability to explain Distributed Objects and Remote Invocation

CO-3	Students have the ability to explain function of distributed file systems
CO-4	Students have the ability to explain Distributed Transaction management, Coordination and Agreement between distributed processes
CO-5	Students can explain what a distributed system is, why one would design a system as a distributed system, and what the desired properties of such systems are.
CO-6	Students can build distributed system software using RMI
CO-7	Students can design a distributed system that fulfills requirements with regards to key distributed systems properties (such as scalability, transparency, etc)

## Semester-III Courses

### Course-1

Course Code:	A1CSP601
Course Title:	Research Methodologies
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Demonstrate the ability to identify complex problem domain.
CO-2	Ability to review research literature.
CO-3	Use research-based knowledge and research methods including design of experiments.
CO-4	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
CO-5	Comprehend and write effective research reports and/or papers.

### Course-2

Course Code:	A1CSP602
Course Title:	Comprehensive Viva
Theory / Lab:	Viva
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Use acquired knowledge and be able to analyze and interpret data, and synthesis of the information to provide valid conclusions.
CO-2	Apply reasoning informed by the contextual knowledge
CO-3	Communicate effectively on complex engineering problems
CO-4	Demonstrate knowledge and understanding of the select specialization.

### Course-3

Course Code:	A1CSP603
Course Title:	Pre-requisite Study
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools
CO-2	Function effectively as an individual, ability to self-learning.
CO-3	Demonstrate the ability to make effective presentations
CO-4	Identify, formulate, review research literature, and analyze complex engineering problems.

### Course-4

Course Code:	A1CSP604
Course Title:	Seminar
Theory / Lab:	Seminar
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Use acquired knowledge and be able to analyze and interpret data, and synthesis of the information to provide valid conclusions.
CO-2	Communicate effectively on complex engineering problems
CO-3	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
CO-4	Comprehend and write effective reports and design documentation
CO-5	Ability to engage in independent and life-long learning in the broadest context of technological change.

### Course-5

Course Code:	A1CSP605
Course Title:	Project
Theory / Lab:	Project work

L-T-P-C:	0-0-0-8
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

## IV Semester Courses

### Course-1

<b>Course Code:</b>	<b>A1CSP606</b>
<b>Course Title:</b>	<b>Project</b>
Theory / Lab:	Project work
L-T-P-C:	0-0-0-18
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

# Dept. of Chemical Engg

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

## B.Tech. (Chemical Engg)

### Semester-I Courses

#### Course-1

Course Code:	AIMAT001
Course Title:	Engineering Mathematics-I
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Apply the knowledge of solving 1 <sup>st</sup> order & 1 <sup>st</sup> degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems & Newton's law of cooling
CO-2	Find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Apply the concepts of Maxima and Minima for finding extreme values
CO-4	Formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation.

#### Course-2

Course Code:	AICYT002:
Course Title:	Chemistry for Chemical Engineers
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Differentiate between the hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis. Students will also gain knowledge on redox reactions and their applications in batteries and fuel cells.
CO-2	Calculate calorific values, outline fractional distillation process, cracking methods and the mechanism of lubrications.
CO-3	Outline Nernst distribution law, Surface chemistry, behavior of colloids and their properties. Student will gain knowledge of order, reaction rates, feasibility of the reaction and gain knowledge about catalytic reactions.
CO-4	Outline Beer's law and its applications, summarize the principles and applications of chromatographic methods.

#### Course-3

Course Code:	AICIT001:
Course Title:	Computer programming
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Have the ability to write a formal algorithmic solution for the given problem & explain the features of C like types including scalar & vector types, operators, expressions, expression evaluation, operator precedence, sequential, conditional & iterative constructs.
CO-2	Have the ability to use modular programming constructs of C while appreciating different ways of exchanging inputs and outputs among modules and different memory allocation strategies in C.
CO-3	Have the ability to define & use user defined data types using C constructs and write C programs that handles files.
CO-4	Grasp the significance of primary constructs & methodology of procedural language C and appreciate the orthogonality of the same in writing reasonably complicated programs, and Grasp the significance of type extensibility in C, need for address as a data type and library functions for dealing with files in writing more complicated programs.

#### Course-4

Course Code:	AICET001:
Course Title:	Basics of Civil & Mechanical Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to know floor area, plinth area, and building materials such as brick, cement, concrete, steel.
CO-2	Able to be aware of concepts of surveying, infrastructure such as buildings, roads, bridges, dams.
CO-3	Able to determine the performance of components like I.C. Engines, turbines, belt, rope and gear
CO-4	Able to identify the type of mechanical component suitable for the required power transmission

#### Course-5

Course Code:	AICHT002:
Course Title:	Introduction to Chemical Engineering
Theory / Lab:	Theory

L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand the role of chemical engineers in process industries and to carry out material and energy balances.
CO-2	Student will be able to understand the basic concepts of momentum, heat and mass transfer.
CO-3	Student will be able to understand the use of equipment required for momentum, heat and mass transfer.
CO-4	Student will be able to understand the basic concepts of reaction engineering and CSTR, PFR & Batch Reactor

#### Course-6

Course Code:	A1EHL001:
Course Title:	English Language Practice –I
Theory / Lab:	Lab
L-T-P-C:	1-0-0-2
Course Outcomes:	
CO-1	Student shall have the ability to understand the syntactical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning.
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/ her professional requirement.
CO-5	Student will be able to comprehend and analyze the core concepts well
CO-6	Student will be able to develop life skills

#### Course-7

Course Code:	A1CYL001 :
Course Title:	Engineering Chemistry lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will acquire a minimum knowledge about the chemistry lab kind of experiments can be performed and the precautions perform four types titrations and understand the principle involved and applications of the method
CO-2	Students will analyze different water samples collected from their residential areas and from other places and the results obtained were compared with Indian standards. And Based on the position of the metals in the electrochemical series a model electrochemical cell is constructed and the values are determined and effect of metal ion concentration is studied.

#### Course-8

Course Code:	A1CIL001:
Course Title:	Computer programming Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Fully appreciate the art of procedural programming in C and develop programs optimally using the full feature set of C language.

## Semester-II Courses

#### Course-1

Course Code:	A1MAT002:
Course Title:	Mathematical Methods
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to find approximate solutions of transcendental equations by using numerical methods.
CO-4	Student will be able to estimate the unknown values of the function using interpolation.
CO-5	Student will be able to solve Initial value problems through numerical methods
CO-6	Student will be able to find the solution of Difference equations which arise in discrete time systems.

#### Course-2

Course Code:	A1CHT001:
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Course Title:	Environmental Studies
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students will understand the knowledge of the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources.
CO-2	Students will acquire the knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity.
CO-3	Students will acquire the knowledge on the environmental legislations of India and understand various attributes of the pollution and their impact and measures to reduce the pollution along with waste management practices.
CO-4	Students will understand social issues related to rural and urban environment and the possible means to combat the challenges and understand global initiatives towards sustainable development, environmental assessment and the stages involved in EIA and the environmental audit.

#### Course-3

Course Code:	AIPYT001:
Course Title:	Engineering Physics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand the phenomena of interference, diffraction and polarization exhibited by light waves and the characteristics of laser and its applications specific to optic fiber.
CO-2	List different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction.
CO-3	Describe the response of materials in presence of electric and magnetic fields and the basic laws of thermodynamics, work done, thermodynamic processes and entropy
CO-4	Explain the system of forces (non-equilibrium) and different types of friction

#### Course-4

Course Code:	AIEET001:
Course Title:	Basic Electrical and Electronics Engineering
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students gain ample knowledge of electrical circuit analysis i.e., AC and DC circuit analysis. And moreover, students can also solve the different types of circuits by using the fundamental concepts.
CO-2	Students are able to know about the predominant role of all electrical machines and identify suitable machine for a particular application.
CO-3	Students can understand the role of the different types of instruments which are used for the different measurements according to the given supply and also ample of knowledge about the power generation, transmission systems.
CO-4	Have the ability to explain the working principle of different types of semiconductor devices.
CO-5	Student have the ability to explain the working principal of transducers and operation of different types of transducers are learnt
CO-6	Student can explain different types of communication systems and also its applications are knowledgeable.

#### Course-5

Course Code:	AIMED001:
Course Title:	Engineering. Drawing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids
CO-3	Student will be able to produce isometric projection from orthographic projections and vice-versa

#### Course-6

Course Code:	AIPYL001:
Course Title:	Engineering Physics Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	

CO-1	Experimentally demonstrate the interference and diffraction of light waves; and measure the numerical aperture of the optic fiber; and the energy loss due to hysteresis for a ferromagnetic material; and apply tangent law for measuring the magnetic fields due to current; and determine the parameters of materials like the thermal conductivity, specific heat, and the coefficient of friction.
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#### Course-7

Course Code:	A1EHL002:
Course Title:	English Language Practice –II
Theory / Lab:	Lab
L-T-P-C:	1-0-0-2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly.
CO-2	Student shall be able to use phrases, foreign expressions correctly.
CO-3	Student shall be able to participate well in debates and discussions.
CO-4	Student shall be able to write technical Reports.
CO-5	Student will be able to prepare Resume and face interviews confidently.
CO-6	Student will be able to communicate confidently and effectively.

#### Course-8

Course Code:	A1MEW001:
Course Title:	Basic Engineering Workshop
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Identify and overhaul the components of Bicycle/ Two Wheeler Engine.
CO-2	Identify the elements of casting, pattern making and prepare a mould for a single piece and split piece pattern.
CO-3	Know the specifications, cutting parameter and perform drilling, milling and grinding operations.
CO-4	Know the specifications, welding parameters and perform arc welding and gas welding.
CO-5	Calculate load for required electrical design and select correct specifications of electrical requisites.

### Semester-III Courses

#### Course-1

Course Code:	A1CHT201:
Course Title:	Material Science for Chemical Engineers
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Interpret the types of bonds in metals and alloys and its imperfections with geometry.
CO-2	Understand the phase diagrams for binary systems
CO-3	Understand the structure, properties, processing and performance related to metals and its alloys .
CO-4	Analyse various properties and applications of ceramic and polymer materials

#### Course-2

Course Code:	A1CHT202:
Course Title:	Chemical Process Calculations
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Carry out material balance calculations which need to be performed in chemical processing operations
CO-2	Understand the concepts of vapor pressure, percentage humidity, relative humidity, dew point temperature and wet bulb temperature
CO-3	Calculate heat effects associated with physical and chemical Processes.
CO-4	Calculate air requirement for a combustion process

#### Course-3

Course Code:	A1CHT203:
Course Title:	Fluid Mechanics for Chemical Engineers
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	To introduce the basic concepts of static and dynamic behavior of fluids
CO-2	To derive Continuity equation & Bernoulli's theorem and explain its application to fluid flow problems

CO-3	Estimate the pressure drop that occurs during fluid flow through packed bed and fluidized bed
CO-4	To expose about fluid moving machinery flow measuring devices such as head and area meters and its selection

#### Course-4

Course Code:	A1CHT204:
Course Title:	Chemical Technology
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student will be able to relate the physical and chemical properties of various compounds towards the working principles of various established technologies in industrial flowsheets
CO-2	Student will be able to understand complexity of various process equipments such as furnaces, complex distillation units etc.
CO-3	Student will have conceptual knowledge towards the application of principles of energy efficient, pollution abatement and raw material recovery and reuse in process flow sheets
CO-4	Student will Have a working knowledge towards various important issues (safety issues, economics etc.) associated to inorganic chemical technologies

#### Course-5

Course Code:	A1CYT205:
Course Title:	Organic Chemistry
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will acquire basic concepts of Organic reactions and the mechanism involved in it and the type of organic reaction and the mechanism involved in it.
CO-2	Students will be able to recognize the configuration and conformation of the molecule. The basic concept in polymers strengthens the student's knowledge in the polymer chemistry which helps him in the future.
CO-3	The students will be able to define terms related to heterocyclic compounds, to recognize their basic structures and to discuss the important chemical, and commercial aspects of compounds.
CO-4	Students will know the chemistry of heterocyclic compounds and their synthesis, reactions and their importance in Pharma industry. On exposure to dye stuff chemistry, the students will acquire knowledge in the synthesis, classification and industrial applications of dyes.

#### Course-6

Course Code:	A1MAT110:
Course Title:	Foundation Elective-I- CVSM
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to check the analytic nature and construct analytic functions by Milne- Thomson method.
CO-2	Student will be able to expand the given complex valued functions as an infinite series.
CO-3	Student will be able to evaluate integrals of complex functions in the given region.
CO-4	Student will be able to apply the knowledge of distributions in sampling.
CO-5	Student will be able to estimate the population parameters and test the hypothesis.

#### Course-7

Course Code:	A1CHL201:
Course Title:	Fluid Mechanics Lab for Chemical Engineers
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain practical knowledge of experimental methods like verification of Bernouli equation, friction factor determination, pressure drop , flow rate calculations in flow lines and packed and fluidized columns etc and handle equipment safely, make measurements to an appropriate degree of accuracy, collect data and analyse the results and write up an appropriate report.

#### Course-8

Course Code:	A1CHL202:
Course Title:	Chemical Technology Lab
Theory / Lab:	Lab

L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to handle different analytical apparatus and to prepare organic and inorganic chemicals through various experimental procedures

## Semester-IV Courses

### Course-1

Course Code:	A1CHT206:
Course Title:	Process Heat Transfer
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the basic laws of heat transfer and LMTD calculations
CO-2	Evaluate heat transfer coefficients for laminar and turbulent flow
CO-3	Evaluating Heat transfer coefficients for Natural convection and forced convection.
CO-4	Analyze heat exchangers and evaporators performance and radiation concepts

### Course-2

Course Code:	A1CHT207:
Course Title:	Chemical Engineering Thermodynamics-I
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student will be able to understand the concepts of heat, work and energy conversion, and calculate heat and work quantities for industrial processes and determine the thermodynamic properties of fluids using a variety of different sources (EOS)
CO-2	Student will be able to understand the relationships among the internal energy, enthalpy, heat capacities, entropy, Gibbs and Helmholtz Free Energies and be able to calculate these energy functions from equations of state and heat capacity data.
CO-3	Student will be able to analyze (calculate efficiencies) typical thermodynamic devices and units (turbine, pump, nozzles, compressor, heat pump, refrigerator, etc) using thermodynamic principles and make thermodynamic analysis of Carnot, Rankine cycles and be able to calculate ideal efficiencies for these cycles.
CO-4	Student will be able to understand processes involving power production, refrigeration, and liquefaction, and be able to calculate relevant system efficiencies for these processes.

### Course-3

Course Code:	A1CHT208:
Course Title:	Mechanical Unit Operations
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	To enable the student to gain basic knowledge in particle characterization namely particle size, shape and specific surface.
CO-2	To enable the student to have working knowledge of particulate solids handling and mixing
CO-3	To enable the student to learn the principles of size reduction and screening and concepts of filtration.
CO-4	To enable the student to understand the functioning of various prominent solid fluid operations related equipment.

### Course-4

Course Code:	A1CHT302:
Course Title:	Core Elective –I- Petroleum Refining
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand the origin and formation of petroleum reserves and their deposits in the world.
CO-2	Student will be able to estimate the properties of petroleum products with their testing methods.
CO-3	Student will be able to understand about desalting & fractionation of petroleum crude.
CO-4	Student will be able to identify the treatment methods of gasoline, kerosene and lubes.

### Course-5

Course Code:	A1MAT104:
Course Title:	Foundation Elective-II- EM-II
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3

<b>Course Outcomes:</b>	
CO-1	Student will be able to solve boundary value problems using Fourier series and Fourier transforms.
CO-2	Student will be able to find the lengths, surface area of revolution and volume of revolution for various curves.
CO-3	Student will be able to understand the physical significance of vector operators.
CO-4	Student will be able to apply vector integral theorems to evaluate Line, Surface and Volume integrals with ease.

#### Course-6

<b>Course Code:</b>	A1CHL203:
<b>Course Title:</b>	Process Heat Transfer Lab
<b>Theory / Lab:</b>	Lab
<b>L-T-P-C:</b>	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Students will gain practical knowledge of experimental methods like conduction, convection and radiation and handle apparatus and substances correctly and safely, make measurements to an appropriate degree of accuracy, collect data and analyse the results and write up an appropriate report

#### Course-7

<b>Course Code:</b>	A1CHL204:
<b>Course Title:</b>	Mechanical unit operations Lab
<b>Theory / Lab:</b>	Lab
<b>L-T-P-C:</b>	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Students will gain practical knowledge of experimental methods like screening, crushing, froth floatation etc and handle equipment safely, make measurements to an appropriate degree of accuracy, collect data and analyse the results and write up an appropriate report

### Semester-V Courses

#### Course-1

<b>Course Code:</b>	A1CHT209:
<b>Course Title:</b>	Process Instrumentation
<b>Theory / Lab:</b>	Theory
<b>L-T-P-C:</b>	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	Understand the basic elements of an instrument and its characteristics
CO-2	Become familiar with various types of instruments for measurement of various process variables like temperature, pressure, vacuum, head, level, composition, flow and density
CO-3	Get a clear perspective of various recording, indicating, signaling instruments, transmission of instrument readings
CO-4	Get an understanding of instrumentation diagrams, control center, process analysis and digital instrumentation

#### Course-2

<b>Course Code:</b>	A1CHT210:
<b>Course Title:</b>	Chem. Engineering Thermodynamics-II
<b>Theory / Lab:</b>	Theory
<b>L-T-P-C:</b>	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	Calculate heat and work requirements for industrial process
CO-2	Compute thermodynamic properties of multi component systems undergoing composition changes.
CO-3	Analyze experimental VLE data to calculate the activity coefficient and obtain simple models for excess Gibbs energy.
CO-4	Have the knowledge of effect of Temperature, Pressure on equilibrium conversion which is useful in design of reactors.

#### Course-3

<b>Course Code:</b>	A1CHT211:
<b>Course Title:</b>	Chemical Reaction Engineering-I
<b>Theory / Lab:</b>	Theory
<b>L-T-P-C:</b>	4-0-0-4
<b>Course Outcomes:</b>	
CO-1	Understanding the difference between order and Molecularity of reaction, difference between elementary and non-elementary reactions
CO-2	Use of Batch, Plug flow and Mixed flow reactors for a given application

CO-3	Difference between series and parallel reactions and their applications
CO-4	Effect of temperature and pressure on reaction rate

#### Course-4

Course Code:	A1CHT212:
Course Title:	Mass Transfer Operations-I
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	To estimate the flux of molecules and diffusivity of gases, liquids and solids.
CO-2	To find out number of stages for a distillation column
CO-3	Understand the mass transfer equipment operations and design parameters.
CO-4	Understand the threshold limits of separation processes

#### Course-5

Course Code:	A1CHT306:
Course Title:	Core Elective-II- IPCE
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand the importance of air pollution and dispersion of plumes
CO-2	Analyse the sources of air pollutants
CO-3	Understand the control methods for treatment of air and water pollutants.
CO-4	Analyse the treatment methods for solid waste management

#### Course-6

Course Code:	A1CHT309:
Course Title:	Core Elective-III - NT
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand classification & properties of nano-materials
CO-2	Student will be able to understand methods used for the synthesis of nano-materials
CO-3	Student will be able to understand applications of nano-science, nano-technology and nano-materials
CO-4	Student will be able to understand characterization of nano-materials

#### Course-7

Course Code:	A1CHL205:
Course Title:	Chemical Reaction Engineering. Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain practical knowledge of experimental methods like determination of order and reaction rate constant for batch reactor, CSTR and plug flow reactors and handle apparatus and substances correctly and safely, make measurements to an appropriate degree of accuracy, collect data and analyse the results and write up an appropriate report.

#### Course-8

Course Code:	A1CHL206:
Course Title:	Mass Transfer Operations Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain practical knowledge of experimental methods like distillation, extraction, leaching, adsorption etc and handle apparatus and substances correctly and safely, make measurements to an appropriate degree of accuracy, collect data and analyse the results and write up an appropriate report.

## Semester-VI Courses

#### Course-1

Course Code:	A1CHT213:
Course Title:	Mass Transfer Operations-II
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	

CO-1	An ability to apply the separation techniques like extraction, leaching & adsorption for the separation of organic and inorganic chemical compounds or solutions as individual components
CO-2	An ability to understand the various techniques like chromatography techniques, ion exchange etc
CO-3	An ability to preliminary design calculations of extractors; adsorption columns, dryers etc
CO-4	An ability to apply the concept of membrane separation technology for industry.

#### Course-2

Course Code:	A1CHT214:
Course Title:	Process Dynamics & Control
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Ability to distinguish a first order and second order system with the understanding of the factors influencing the dynamic response of system for different inputs
CO-2	Develop control system block diagram and write down the combined transfer function for a given controlled process responding to a change in set point or load and study its dynamic behavior
CO-3	Determine the characteristic equation from a given control system block diagram and solve using Routh test, Root-locus and Bode stability criteria
CO-4	Ability to understand the difference between P, PI, PD controllers and analyze different process control strategies using Z-N and C-C tuning rules

#### Course-3

Course Code:	A1CHT215:
Course Title:	Chemical Reaction Engineering -II
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student will be able to calculate the residence time distribution function and design real reactors using the Dispersion and Tank in series models
CO-2	Student will be able to calculate the effect of pore diffusion on surface kinetics in solid catalytic reactions
CO-3	Student will be able to design heterogeneous catalytic reactors at a basic level
CO-4	Student will be able to calculate conversion in fluid solid reactions using shrinking core model and progressive conversion model

#### Course-4

Course Code:	A1CHT216:
Course Title:	Process Modeling & Simulation
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the model equations for chemical process problems involving reaction kinetics, heat transfer and mass transfer etc.
CO-2	Write component and energy balances for chemical engineering process
CO-3	Solve the numerical methods for solving ODEs applicable to process equipment
CO-4	Analyze the simulation using MATLAB tools for chemical engineering problems

#### Course-5

Course Code:	A1CHT310:
Course Title:	Core Elective-IV- FT
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand the importance of food processing, handling and storage.
CO-2	Student will be able to understand the biochemistry of fermentation and the role of microbes in fermentation.
CO-3	Student will be able to understand the importance of large scale processing.
CO-4	Student will be able to understand the importance of waste management and maintenance of hygiene.

#### Course-6

Course Code:	A1CHL207:
Course Title:	Process Dynamics & Control Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to understand and analyze process control engineering by studying the dynamics of the major components of a control system

**Course-7**

Course Code:	A1CHL208:
Course Title:	Process Modeling and Simulation lab using MATLAB
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain practical knowledge on Mathematical model equations development and simulation using MATLAB tool for chemical process systems to collect data and analyse the results report.

**Course-8**

Course Code:	A1MET402:
Course Title:	Open Elective –I (AFE)
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Able to use various alternate fuels appropriately to the needs
CO-2	Able to understand the importance of oxygenated fuels
CO-3	Be familiar with applications of CNG, LPG and hydrogen fuels
CO-4	Be acquainted with the knowledge of production of biofuels
CO-5	Be familiar with emission regulations in India
CO-6	Able to explain different emission control methods used for automobiles

**Semester-VII Courses****Course-1**

Course Code:	A1MST001:
Course Title:	Managerial Economics & Financial Analysis
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	An ability to apply the knowledge of managerial and economic concepts.
CO-2	An ability to design a system according to the resources availability to meet the organizational needs.
CO-3	An ability to use the techniques and skills and methods of management to resolve the issues at organizational levels as well as at global level.
CO-4	An ability to identify managerial problems with optimum solutions.

**Course-2**

Course Code:	A1CHT217:
Course Title:	Transport Phenomena
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student will be able to calculate diffusivity, thermal conductivity and viscosity at low and high pressure and calculate momentum flux and velocity distribution for typical geometries.
CO-2	Student will be able to calculate heat flux and temperature distribution for typical geometries.
CO-3	Student will be able to calculate mass flux and concentration distribution for typical geometries.
CO-4	Student will be able to use Equations of change for solving mass, momentum and heat transport problems and derive equation of change for turbulent transport.

**Course-3**

Course Code:	A1CHT218:
Course Title:	Plant Design & Economics for Chemical Engineers
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Perform the economic analysis for process including capital investment, product cost, and profitability. Submit results in a written report including equipment specifications, economic analysis, and safety information.
CO-2	Must be able to calculate capital investment, product cost for process and the importance of depreciation, interest, taxes and insurance and how they affect the product cost.
CO-3	Must be able to select the best investment among various alternatives available using profitability analysis.
CO-4	Define and formulate optimization problem and solve it using graphical method and Analytical methods.

**Course-4**

Course Code:	A1CHT313:
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Course Title:	Core Elective – V- BCE
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	To introduce an overview of the basic structure and function of important cell types, RNA and DNA, amino acids and proteins.
CO-2	To teach the kinetics of enzyme catalyzed reactions and the effect of various parameters on enzyme activity and kinetics and also to educate the methods of enzyme immobilization and the applications of immobilized enzymes.
CO-3	To impart the kinetics of cell growth including substrate utilization and product formation and also to teach the design and analysis of various types of bioreactors.
CO-4	To train on various downstream processing strategies for product recovery and purification.

#### Course-5

Course Code:	A1CHT317:
Course Title:	Core Elective – VI- CC
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand electrochemical fundamentals
CO-2	Understand corrosion preventing methods
CO-3	Understand environmental induced corrosion
CO-4	Describe the more common methods used by industry to control corrosion.

#### Course-6

Course Code:	A1CHT321
Course Title:	Core Elective – VII- ISHM
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students will be able to understand about the Safety Programs, Engineering Ethics, Accident and Loss Statistics, Acceptable Risk, Public Perceptions.
CO-2	Students will be able to understand about the concept of Toxicology and Industrial Hygiene.
CO-3	Students will be able to understand about Fires and Explosions along with the designs to prevent them.
CO-4	Students will be able to understand about Relief Systems and the methods used for Hazard Identification.

#### Course-7

Course Code:	A1CET402:
Course Title:	Open Elective-II- APC
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Decide the ambient air quality based on the analysis of air pollutants
CO-2	Judge the plume behavior in a prevailing environmental condition
CO-3	Design particulate and gaseous control measures for an industry
CO-4	Apply the concept of ambient air quality in maintaining the air pollutant levels in the atmosphere

#### Course-8

Course Code:	A1CHD201:
Course Title:	Process Equipment Design & Drawing using AutoCAD
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will be able to draw instrumentation symbols, process flow sheet symbols, process flow diagrams, instrumentation diagrams, distillation column, batch reactor, double pipe heat exchanger, shell & tube heat exchanger and multiple effect evaporator using AutoCAD

### Semester-VIII Courses

#### Course-1

Course Code:	A1CHT323:
Course Title:	Core Elective – VIII (Self-study)- OSC
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	An ability to know about the three generations of solar cells combined with an introduction to life cycle analysis for solar cells.

CO-2	An ability to understand the working principle and application of organic solar cells.
CO-3	An ability to understand the materials for organic solar cells with focus on the active layer including common polymer materials, fullerenes, and low band-gap polymers.
CO-4	An ability to learn about the production, stability and lifetime of organic solar cells.

#### Course-2

Course Code:	A1CHP601 & 602
Course Title:	Directed Study & Project
Theory / Lab:	
L-T-P-C:	0 - 0 - 15 - 10
Course Outcomes:	Students will be able to
CO-1	Apply the engineering knowledge of their concerned project topic
CO-2	Design engineering solutions to complex problems by utilizing research-based knowledge including design of experiments, an
CO-3	Use modern tools including for modelling to solve complex engineering problems
CO-4	Function effectively as a team.
CO-5	Communicate effectively.
CO-6	Acquire skills useful for life-long learning

# Dept. of IT

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

## B.Tech. (Information Technology)

### Semester-I Courses

#### Course-1

Course Code:	AIMAT001
Course Title:	Engineering Mathematics - I
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students will be able to apply the knowledge of solving 1st order & 1st degree differential equations in finding orthogonal trajectories of families of curves, Growth & Decay problems
CO-2	Student will be able to find the solution of initial value problems and be able to evaluate improper integrals of particular kind by using Laplace Transforms
CO-3	Students will be able to apply the concepts of Maxima and Minima for finding extreme values
CO-4	Student will be able to formulate and solve P.D.E and be able to apply the knowledge in finding the solutions of one dimensional wave equation and one dimensional heat equation .

#### Course-2

Course Code:	A1CYT001
Course Title:	Engineering Chemistry
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students gain the knowledge about water used in industries (boilers etc) and for drinking purpose, difference between hard water and soft water, estimation of hardness of water and specification of potable water and purification of sea water through reverse osmosis.
CO-2	Students gain the knowledge of galvanic cells, concentration cells, applications of ion selective electrodes, Conductometry and Potentiometry to understand the principle and applications of electrochemistry. Topics on electrochemical cells, batteries and fuel cells make students understand the alternate sources of energy and also help them to tackle problems of corrosion and control.
CO-3	Students gain the knowledge on mechanism of corrosion, factors responsible, types corrosion and methods of protection.
CO-4	Students gain the knowledge on structure, synthesis properties and applications of polymers, additives to be mixed with polymers to obtain desired plastics and moulding techniques, advanced topics on plastics like conducting polymers and biodegradable polymers, fibre reinforced plastics and bullet proof plastics, synthetic plastics that are essential to latest technology.
CO-5	Student gain the knowledge on the determination of calorific value by bomb calorimeter, the proximate and ultimate analysis of coal, Fractional distillation of crude, followed by catalytic cracking to obtain the liquid fuels for the functioning of internal combustion engine, octane and cetane number, which have large focus on oil industry.
CO-6	Students gain knowledge on advanced materials like carbon nano tubes and fullerenes, their properties and applications, manufacturing of cement, need for green chemistry, principles of green chemistry solar cells and greenhouse effect and their importance.

#### Course-3

Course Code:	A1CET001
Course Title:	Basic of Civil & Mechancial Engineering
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Able to know floor area, plinth area, and building materials such as brick, cement, concrete, steel.
CO-2	Able to be aware of concepts of surveying, infrastructure such as buildings, roads, bridges, dams.
CO-3	Able to determine the performance of components like I.C. Engines, turbines, belt, rope and gear
CO-4	Able to identify the type of mechanical component suitable for the required power transmission

**Course-4**

Course Code:	A1CHT001
Course Title:	Environmental Studies
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will have knowledge on the natural resources and their importance for the sustenance of the life and recognize the need to conserve the natural resources
CO-2	Student will have knowledge on the concepts of the ecosystem and its function in the environment, biodiversity of India and the threats to biodiversity, and conservation practices to protect the biodiversity
CO-3	Student will have knowledge on various attributes of the pollution and their impact and measures to reduce or control the pollution along with waste management practices
CO-4	Student will have knowledge on social issues both rural and urban environment and the possible means to combat the challenges
CO-5	Student will have knowledge on the environmental legislations of India and the first global initiatives towards sustainable development, environmental assessment and the stages involved in EIA and the environmental audit

**Course-5**

Course Code:	A1ECT001
Course Title:	Fundamentals of Electronic Circuits & Devices
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students have the ability to develop and solve mathematical representations for simple RLC circuits.
CO-2	Students will be able to simplify various circuits using Mesh and Nodal Analysis.
CO-3	Students will understand the working principle of different types of semiconductor diodes.
CO-4	Students will be able to design and analyze various Rectifiers with and without filters.

**Course-6**

Course Code:	A1EHL001
Course Title:	English Language Practice - I
Theory / Lab:	Lab
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability understand the syntactical and grammatical intricacy
CO-2	Student shall be able to use right structure for right context and meaning.
CO-3	Student shall be able to read and comprehend the content in English well
CO-4	Student shall be able to write well for his/her professional requirement
CO-5	Student shall be able to Speak in English well
CO-6	Student shall be able to understand and analyze the core components of his study well

**Course-7**

Course Code:	A1CYL001
Course Title:	Engineering Chemistry Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will gain knowledge on the method of determination of acid/base, total hardness, iron and zinc contents in the sample solution.
CO-2	Students will gain knowledge on the principles of conductometric, potentiometric, pH metric and colorimetric methods of determination.

CO-3	Students will understand in construction of galvanic cell, determination of calorific value, and preparation of biodiesel.
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#### Course-8

Course Code:	A1MEW001
Course Title:	Basic Engineering Workshop
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Will be aware of the basic engineering trades and be able to execute related work at a rudimentary level
CO-2	Will be able to select and use proper tools for the different tasks
CO-3	Will be able to apply knowledge and skills developed to handle real-life situations in these areas

### Semester-II Courses

#### Course-1

Course Code:	A1MAT002
Course Title:	Mathematical Methods
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be able to obtain the solution of linear system of equations which frequently occur in engineering problems
CO-2	Student will gain the proficiency in finding the Eigen values and Eigen vectors and reduction of quadratic forms to canonical forms
CO-3	Student will be able to estimate the missing terms of given data using interpolation.
CO-4	Student will be able to solve Initial value problems through numerical methods.
CO-5	Student will be able to find the solution of Difference equations which arise in discrete time systems.

#### Course-2

Course Code:	A1MED001
Course Title:	Engineering Drawing
Theory / Lab:	Theory/Lab
L-T-P-C:	1-0-3-3
Course Outcomes:	
CO-1	Student will be able to construct regular polygons, conic curves and simple scales
CO-2	Student will be able to draw orthographic projections of points, lines, planes and solids
CO-3	Student will be able to produce isometric projection from orthographic projections and vice-versa

#### Course-3

Course Code:	A1PYT002
Course Title:	Applied Physics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to understand the phenomena of interference, diffraction and polarization exhibited by light waves.
CO-2	Student shall understand about laser, its characteristics and production with an example and application of laser in specific to optic fiber.
CO-3	The student shall understand about different crystal systems, space lattices, and parameters of unit cell and the Bragg's law of X-ray diffraction.
CO-4	Student will be able to understand foundation principles of quantum mechanics and semiconductors.
CO-5	Student shall understand about response of the materials in presence of electric and magnetic fields and the basic laws of electromagnetic waves.

**Course-4**

Course Code:	A1EHT101
Course Title:	Professional Communication
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student shall understand the significance of cultural front in communication and obtain the ability to communicate effectively at cross cultural fronts
CO-2	The teaching and learning activities encompass three major aspects including foundations of business and organizational communication, and planning and composing business messages. Students shall apply this skill set when writing e-mails, memos, letters, minutes of a meeting and a short business report.
CO-3	Student acquires effective public speaking skills
CO-4	Students apply appropriate written and spoken skills in a variety
CO-5	Student prepares himself for combating the future requirements of the employment
CO-6	Student shall be able to understand and analyze the core components of his study well

**Course-5**

Course Code:	A1CIT001
Course Title:	Computer Programming
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Have the ability to write a formal algorithmic solution for the given problem & explain the features of C like types including scalar & vector types, operators, expressions, expression evaluation, operator precedence, sequential, conditional & iterative constructs.
CO-2	Have the ability to use modular programming constructs of C while appreciating different ways of exchanging inputs and outputs among modules and different memory allocation strategies in C.
CO-3	Have the ability to define & use user defined data types using C constructs and write C programs that handles files.
CO-4	Grasp the significance of primary constructs & methodology of procedural language C and appreciate the orthogonality of the same in writing reasonably complicated programs.
CO-5	Grasp the significance of type extendibility in C, need for address as a data type and library functions for dealing with files in writing more complicated programs.
CO-6	Fully appreciate the art of procedural programming in C and develop programs optimally using the full feature set of C language.

**Course-6**

Course Code:	A1EHL002
Course Title:	English Language Practice - II
Theory / Lab:	Lab
L-T-P-C:	1-0-2-2
Course Outcomes:	
CO-1	Student shall have the ability to speak intelligibly
CO-2	Student shall be able to use phrases, foreign expressions and idioms correctly
CO-3	Student shall be able to participate well in debates and discussions
CO-4	Student shall be able to write both Technical and General reports well
CO-5	Student shall be able prepare resume well and face the interviews confidently
CO-6	Student shall communicate confidently and effectively

**Course-7**

Course Code:	A1CIL001
Course Title:	Computer Programming Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2

Course Outcomes:	
CO-1	Have the ability to pick and choose the required built-in data-types for the specific problem and utilize the full power of operators and expression evaluation of C Language while writing programs for any given problem.
CO-2	Have the ability to use choose and utilize different control constructs in C Language depending on the context of the need while developing a C program for any specific problem.
CO-3	Have the ability to divide the parts of a program solution into functions and write a program in C as an inter-play of functions using each other in what is called modular programming.
CO-4	Have the ability to fully appreciate the concept and utilization of single and multi-dimensional arrays of different data-types in C.
CO-5	Have the ability to appreciate the concept of address variables and understand the benefits and utilization of the same along with under the flexibility provided by dynamic memory allocation and its comparison to static memory allocation.
CO-6	Have the ability to appreciate the concept of user defined data types and utilize these concepts to define new composite data types as required for implementing solutions to a problem in a C program.
CO-7	Have the ability to appreciate the library support available in standard C for dealing with external files both for read and write purposes and use them as required while developing C Programs.

### Course-8

Course Code:	A1PYL002
Course Title:	Applied Physics Laboratory
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student will be able to experimentally observe interference and diffraction patterns of light waves due to different optical devices and determine the given parameters.
CO-2	Student shall understand the tir process in the optic fiber experimentally and will be able to determine the numerical aperture and bending loss of the optic fiber.
CO-3	Student shall experimentally determine the temperature coefficient of resistance, energy gap, type of charge carriers and concentration of charge carriers in a semiconductor and to study the I-V characteristics of the given p-n junction diode.
CO-4	Student shall experimentally study the magnetic hysteresis and determine related parameters and study the variation of magnetic fields due to currents and to study the frequency response of LCR circuits.

### Semester-III Courses

#### Course-1

Course Code:	A1CIT201
Course Title:	Data Structures
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Have the ability to compare different searching and sorting methods and perform basic operations on stacks and queues (Knowledge Outcome)
CO-2	Have the ability to implement linked lists and trees and use them in various applications (Knowledge Outcome)
CO-3	Have the ability to implement various tree and graph ADTs and to use them solve common graph problems (Knowledge Outcome)
CO-4	Grasp the significance of creating, solving, and designing, testing, debugging and applying of linear data structures. (Understanding Outcome)
CO-5	Grasp the significance of creating, solving, and designing, testing, debugging and applying of non-linear data structures. (Understanding Outcome)
CO-6	Fully appreciate the art of different data structures and applying the knowledge of data structures to various applications. (Applying)

#### Course-2

Course Code:	A1CIT202
Course Title:	Mathematical Foundations of Computer Science
Theory / Lab:	Theory

L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will be able to formulate and validate the logical expressions for a variety of applications and will be able to understand the fundamental results of number theory.
CO-2	Students will be able to design relational databases, design finite automata to recognize string patterns and be able to solve problems using mathematical induction.
CO-3	Students will be able to formulate all possible permutations and combinations for problems in hand and also solve recurrence relations for various problems.
CO-4	Students can grasp the significance of mathematical and predicate logic, number theory and set theory in computer science applications.
CO-5	Students can grasp the significance of having knowledge of combinatorics and recurrence relations which help in effective design of various software applications
CO-6	Students can fully appreciate the feature set and essence of various principles of mathematics which can be applied in real time computer science applications

### Course-3

Course Code:	A1CIT203
Course Title:	Digital Logic Design
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	have the ability to deal with different number systems and perform basic arithmetic operations, explain in detail Boolean algebra operations, basic gates for implementing different Boolean operations, forms of representing Boolean expressions and minimizing them.
CO-2	have the ability to describe, analyze and build combinational and sequential circuits and explore some of the most widely used combinational circuits.
CO-3	have the ability to describe, analyze and build common synchronous sequential circuits like registers, counters and PLAs and also describe the design procedure and issues involved in asynchronous sequential circuits.
CO-4	grasp the significance of number systems, Boolean algebra and combinational circuit design and how they might be applied for designing circuits for any given problem.
CO-5	grasp the significance of sequential circuits, distinguishing them from combinational circuits and the procedure to be used for coming up with sequential circuits (synchronous and asynchronous)
CO-6	fully appreciate the basics of logic design, digital gates to support basis Boolean operations and the process of designing different circuits for required logical functions that have state and no state.

### Course-4

Course Code:	A1CIT204
Course Title:	UNIX & Shell Programming
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will be able to identify the features of UNIX operating system and convinced that how good UNIX operating system is .
CO-2	Students will be able to grasp the syntax and semantics of grep , sed and awk scripting and able to process the text files and redirect the streams by combining one or more commands as a script.
CO-3	Students will be able to process files and manage devices with the help of utilities in UNIX operating system.
CO-4	Students will be able to develop basic korn shell scripts for a specific purpose using script programming constructs.
CO-5	Students will be able to identify how UNIX operating system environment can be customized
CO-6	Appreciate the art of UNIX operating system and able to communicate with operating system by developing own commands

### Course-5

Course Code:	A1CIT205
Course Title:	Data Communications
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4

<b>Course Outcomes:</b>	
CO-1	Have the ability to explain data communication standards, OSI Model and its functionality and services of each layer.
CO-2	Have the ability to explain about transmission media and the switching.
CO-3	Have the ability to explain about various errors detection and correction techniques.
CO-4	Grasp the significance of transmission media and transmission mechanisms that are required to communicate the data.
CO-5	Grasp the significance of applying various error detection and correction techniques in various protocols for effective communication.
CO-6	Fully appreciate the conglomeration of equipments and the underlying transmission principles required for establishing a communication system

#### Course-6

Course Code:	AIMST001
Course Title:	MANAGERIAL Economics & Financial Analysis
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
<b>Course Outcomes:</b>	
CO-1	have the ability to explain and discuss in detail significance of managerial economics, laws and rules that govern demand, demand forecasting, theory of production and cost analysis.
CO-2	have the ability to explain and discuss in detail types of competition, pricing models, different types of business organizations and business cycles.
CO-3	have the ability to explain and discuss capital budgeting options, proposal evaluation techniques, accounting principles, maintaining accounting statements, and evaluating business using well known ratios based on accounting statements.
CO-4	grasp the significance of demand analysis, production theory and cost analysis, pricing, and how these would help determine whether a business model is feasible and how to price products.
CO-5	grasp the significance of different types of starting organizations and their relative merits and demerits, how to organize capital, ability to evaluate proposals and good accounting practices and how those artifacts track the business on an ongoing basis.
CO-6	fully appreciate the important of understanding what goes into managing a business from an economical perspective and how tracking of business activity needs to be done for reflecting business on an operating basis and evaluating the effectiveness

#### Course-7

Course Code:	A1CIL201
Course Title:	Data Structures Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	Able to design and analyze the time and space efficiency of the data structure
CO-2	have the ability to implement linear and non-linear data structures like trees and graphs
CO-3	have the ability to distinguish between the purpose of various non-linear data structures
CO-4	Have practical knowledge on the applications of data structures
CO-5	Be capable to identify the appropriate data structure for given problem

#### Course-8

Course Code:	A1CIL202
Course Title:	UNIX & Shell Programming Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
<b>Course Outcomes:</b>	
CO-1	An ability to understand the basic features of UNIX and be able to login to a remote machine in order to work with commands in all possible ways with a clear exposure on UNIX file system
CO-2	An ability to write an expression that can be used in conjunction with sed in order to match and remember a particular pattern and also have an exposure of using awk effectively

CO-3	An ability to write a foreground or background shell script that accepts input through command line or through console in order to perform various computations with a use of several operators and also could learn the usage of awk scripts in conjunction with shell.
CO-4	An ability to write C programs with an implementation of system call interface provided by UNIX to simulate the working of basic commands like ls, cp and mv

#### Course-9

Course Code:	A1ACA510
Course Title:	Soft Skills – I
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	Students shall develop their interpersonal skills and shall be an effective goal oriented team player
CO-2	Students shall evolve as professional with idealistic, practical and moral values
CO-3	Students shall develop communication and problem solving skills
CO-4	Students develop improve their attitude towards life and understand its influence on their behavior

#### Semester-IV Courses

##### Course-1

Course Code:	A1CIT206
Course Title:	Object Oriented Programming
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	have the ability to explain benefits of object oriented programming and how and why they make it easy to model real world, explain and discuss the basic language features of JAVA and its design goals.
CO-2	have the ability to explain and discuss JAVA support of object oriented concepts like abstraction, encapsulation, inheritance and polymorphism and JAVA rich features on exception handling and multi-threading.
CO-3	have the ability to explain and discuss JAVA API library particularly the input/output, utilities and user interface packages and how they can be used to implement rich applications in JAVA.
CO-4	grasp the significance of object oriented programming and how JAVA makes it easy and facilitates good object oriented programming.
CO-5	grasp the significance of advanced language features like exception handling, multi-threading and event driven programming and appreciate the JAVA API support for using these features of the language.
CO-6	fully appreciate the art of object oriented programming and have the know-how to utilize the rich API provided by JAVA platform to develop applications of significant complexity with relative ease.

##### Course-2

Course Code:	A1CIT207
Course Title:	Operating Systems
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	have the ability to explain in detail the purpose of the operating system, kernel structure and its interface with application software and to explain in detail the different process management related aspects of typical operating systems.
CO-2	have the ability to describe in detail the different ways and detail in which the memory management and file management services are provided in a typical operating system.
CO-3	have the ability to describe in detail the I/O management and protection and security services provided by a typical operating system.
CO-4	grasp the significance of importance, role and details of basic operating system structure, process management services and memory management services.
CO-5	grasp the significance of different ways in file system and file management services are provided by operating systems and how operating systems take care of protection and security services.
CO-6	fully appreciate the role, different alternate ways in which operating systems are implemented and different variations on the common services provided by operating systems.

**Course-3**

Course Code:	A1CIT208
Course Title:	Database Management Systems
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	will have the ability to explain different model for data organization and basic set theory concepts that lead to entity relationship modeling that is basis for RDBMS along with relational algebra and relational calculus notations.
CO-2	will have the ability to explain and describe the different query and manipulations constructs available in SQL standard for data querying and manipulation, and how to design a good relational database eliminating redundancies using normalization.
CO-3	will have the ability to explain and describe the transaction management and recovery aspects of typical commercial RDBMS and how data storage of RDBMS is implemented using external data structures.
CO-4	grasp the significance of relational data modeling and structured querying on top of typical RDBMS along with advantages of RDBMS and more specifically of DBMS over file systems.
CO-5	grasp the significance of structured approach to RDBMS design, the transactional and recovery features of RDBMS and data structures used for external data storage of RDBMS in a file.
CO-6	full appreciate the need, working and feature set of relational database management systems.

**Course-4**

Course Code:	A1CIT209
Course Title:	Computer Architecture
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	have the ability to explain the concept of stored program computer & the different representations forms for basic data types, ALU & instruction design all the way from macro instruction design to micro instructions to ALU circuit design and different ways of designing control unit.
CO-2	have the ability to demonstrate complete understanding of algorithms for basic arithmetic operations on different types of data and memory design aspects of computer design.
CO-3	have the ability to demonstrate sound understanding input/output organization including modes of transfer, advanced processor design aspects like pipelining and vector processing, and multiprocessor design principles.
CO-4	grasp the significance of basic computer organization including designing and building ALU, Instruction Design and corresponding control unit design & algorithms for basic arithmetic operations on all data types.
CO-5	grasp the significance of memory devices, memory design principles in modern computers, Basic arithmetic operation algorithms and I/O organization of computer, concepts involved in super scalar processor design, and concepts involved and multi-processor design.
CO-6	fully appreciate the concepts design & development of modern stored program computers.

**Course-5**

Course Code:	A1CIT210
Course Title:	Formal Languages and Automata Theory
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	have the ability to explain the basic notations and concept of regular expressions and finite automation and other equivalent machines.
CO-2	have the ability to explain and describe in detail regular languages and their properties, context free grammars and their languages and hierarchy of languages as classified by Chomsky.
CO-3	have the ability to explain in detail pushdown automation and its equivalence to context free grammars, Turing machines and the whole theory of computability.
CO-4	grasp the significance of regular grammars and all their equivalent automations and expressions and some case studies on where they are useful.

CO-5	grasp the significance of context free grammars, their equivalent automata, Turing machine and their generality and equality to abstract computer and whole theory of computability.
CO-6	fully appreciate the formal basis for design of any formal language and how we can think of machines that can automatically verify validity of a string against a grammar and the theory behind defining what is computable and what is not.

#### Course-6

Course Code:	A1MAT109
Course Title:	Probability and Statistics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Students will able to apply probabilistic tools to study systems with random components in many areas of communication networks, electro physics and computers.
CO-2	Students will be able to estimate the parameters of population in many socio- economic and industrial production related surveys and reducing sampling errors.
CO-3	Students will able to get Prediction and control the numerical and time series data occurs in industry and scheduling
CO-4	Student will able to evaluate the performance measures of the systems in Networks, transportation systems, process and production lines.

#### Course-7

Course Code:	A1CIL203
Course Title:	Object Oriented Programming Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students able to apply java programming constructs to perform mathematical operations
CO-2	Students able to apply control statements and iterative statements
CO-3	Students able to apply classes concepts and constructors ,methods
CO-4	Students able to apply inheritance and Exception handling
CO-5	Students able to apply multi threading concepts,network concepts
CO-6	Students able to apply awt components to design Graphcal user interfaces

#### Course-8

Course Code:	A1CIL204
Course Title:	Database Management Systems Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students Will be able to model the prototype for database from client requirements
CO-2	Students will be able to create and alter the table data structures
CO-3	Student will be able to retrieving data from database to perform a specific task
CO-4	Students will be able to modify data in terms of update, delete .
CO-5	Students will be able to model the database to avoid the redundancy
CO-6	Students will be able to write procedures & triggers for data access from thierd party like other programming languages and ensure security.

#### Course-9

Course Code:	A1ACA512
Course Title:	General Aptitude
Theory / Lab:	Theory
L-T-P-C:	2-0-0
Course Outcomes:	

CO-1	Understand the basic concepts of QUANTITATIVE ABILITY
CO-2	Understand the basic concepts of LOGICAL REASONING Skills
CO-3	Acquire satisfactory competency in use of VERBAL REASONING
CO-4	Solve campus placements aptitude papers covering Quantitative Ability, Logical Reasoning and Verbal Ability
CO-5	Compete in various competitive exams like CAT, CMAT, GATE, GRE, GATE, UPSC, GPSC etc.

### Semester-V Courses

#### Course-1

Course Code:	A1CIT211
Course Title:	Compiler Design
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will have the ability to write the Lexical Analysis Phases for any Programming construct.
CO-2	Students will have the ability to use the Parsers like SLR, LALR and CLR Parsers.
CO-3	Students will be able to generate an optimized code for a given program in a programming language.
CO-4	Students will be able to grasp the significance of Lexical and syntactic analysis
CO-5	Students will be able to grasp the significance of code optimization and code generation phases of a compiler.
CO-6	Students can fully appreciate the art of Compilers and use them for Real Time Problems.

#### Course-2

Course Code:	A1CIT212
Course Title:	Computer Networks
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Student will be able to understand the importance of layered architecture and various routing and congestion control algorithms
CO-2	Student will be familiar with the address classes and transport layer protocols
CO-3	Student is exposed to various application layer protocols like DNS, WWW, Simple mailing, HTTP, VOIP etc.
CO-4	Student will understand the concepts of mobile computing, mobile ad-hoc networks and wireless sensor networks.
CO-5	Student will be able to apply the concepts of networking and configure network with static IP addressing.

#### Course-3

Course Code:	A1CIT213
Course Title:	Micro-Processors & Interfacing
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Know the architecture of 8086 microprocessor, know the characteristic differences between 8085 and 8086 microprocessors. Learn the Pin diagram of 8086 along with its modes of operation.
CO-2	Explain the data transfer, arithmetic and logical instructions of 8086.
CO-3	Understand the string manipulation, branch control, flag, and processor control group of instructions. Write simple assembly language programs.
CO-4	Know the interrupt structure of 8086, and learn the architecture and working principle of 8259 interrupt controller
CO-5	Design the chip select logic for interfacing static RAM and EPROM with 8086. To know about 8257 DMA controller.

CO-6	To understand the importance of Input/output ports via 8255. To be able to interface devices like keyboard/display unit, stepper motor, ADC and DAC with 8086 microprocessor.
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#### Course-4

Course Code:	A1CIT214
Course Title:	Web Technologies
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students able to design static and dynamic web pages according to client requirements.
CO-2	Students able to identify when to choose client-side scripting and server-side scripting.
CO-3	Students able to understand how to store and exchange information between applications using XML.
CO-4	Students will able to configure a web server and how to deploy an application into a web server.
CO-5	Students will able to design and develop a various applications by integrating the technologies.

#### Course-5

Course Code:	A1CIT311
Course Title:	Data Ware housing & Data Mining
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Have the ability to describe key areas such as OLAP Design and various tasks in Data preprocessing.
CO-2	Have the ability to perform common tasks on data warehousing like mining frequent patterns.
CO-3	Have the ability to provide an overview of classification and cluster analysis to be used for machine learning.
CO-4	Grasp the necessity for building and evaluating predictive and descriptive models.
CO-5	Fully appreciate the necessary background and skills to turn available data into valua-ble and useful information

#### Course-6

Course Code:	A1CIT322
Course Title:	Routing & Switching Concepts
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Ability to understand the difference between OSI model and TCP/IP protocol suite.
CO-2	Ability to choose a particular routing protocol (static or dynamic) and be able to configure the routers.
CO-3	Ability to understand the role of switch at layer 2 and be able to configure, switch port security, VLAN, VTP etc.
CO-4	Ability to design networks and configure the intermediate devices along with basic security features.
CO-5	Fully appreciate the role of a network engineer in designing small to medium scale networks.

#### Course-7

Course Code:	A1EET403
Course Title:	MATLAB
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Knowledge of MATLAB environment and its programming fundamentals
CO-2	Ability to write Programs using commands, functions and vectors
CO-3	Able to handle polynomials, and use 2D Graphic commands

**Course-8**

Course Code:	A1MBT311
Course Title:	Internet Marketing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	An overall understanding of the dimensions of marketing.
CO-2	Ability to develop strategies to leverage the potential of internet marketing.
CO-3	An ability to develop and leverage web marketing models
CO-4	An Understanding of online consumer behavior and ethics in digital marketing

**Course-9**

Course Code:	A1CIL205
Course Title:	Compiler Design & Computer Networks Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	students have the ability to design and implement the first phase of the compiler
CO-2	students have the ability to design and implement the second phase of the compiler
CO-3	students have the ability to understand the design of a modern compilers
CO-4	Applying shortest path routing algorithms
CO-5	Shall gain knowledge of sending packet with reliability

**Course-10**

Course Code:	A1CIL206
Course Title:	Web Technologies Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	students will be able to design static web pages with rich look and feel
CO-2	Students will be able to design and generate dynamic web contents with help of serverside scripting
CO-3	Students able to understand how to store and exchange information between applications using XML.
CO-4	students will be able to retrieve data from database based on user need using serverside scripting
CO-5	students will be able to integrate the technologies to design a complete web application
CO-6	Students will be able to configure a web server and how to deploy an application into a web server.

**Course-11**

Course Code:	A1ACA511
Course Title:	Soft Skills - II
Theory / Lab:	Theory
L-T-P-C:	2-0-0-0
Course Outcomes:	
CO-1	Students shall develop their interpersonal skills and shall be an effective goal oriented team player
CO-2	Students shall evolve as professional with idealistic, practical and moral values
CO-3	Students shall develop communication and problem solving skills
CO-4	Students develop improve their attitude towards life and understand its influence on their behavior

**Semester-VI Courses****Course-1**

Course Code:	A1CIT215
Course Title:	Design & Analysis of Algorithms
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Understand the data structures and analyze worst-case running times of algorithms using asymptotic analysis.
CO-2	Describe the divide-and-conquer, dynamic, greedy paradigms and explain when an algorithmic design situation calls for it.
CO-3	Explain major graph algorithms and their analyses. Employ graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components and analyze them.
CO-4	Explain the different ways to analyze randomized algorithms. Recite algorithms that employ randomization. Explain the differences between a randomized algorithm and an algorithm with probabilistic inputs.
CO-5	Analyze randomized algorithms. Employ indicator random variables and linearity of expectation to perform the analyses. Recite analyses of algorithms that employ this method of analysis

#### Course-2

Course Code:	A1CIT216
Course Title:	Software Engineering
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Able to acquire knowledge on nature of software, software engineering principles and prepare the SRS for a software product.
CO-2	Able to understand the types of requirements suitable for the product construction and choose respective development model.
CO-3	Able to design the user interface of the product.
CO-4	Able to know the testing methodology of the product for reliability check by applying different metrics.
CO-5	Able to understand the risk and quality management of the product

#### Course-3

Course Code:	A1CIT217
Course Title:	OOAD & Design Patterns
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Ability to understand a system described in UML diagrams
CO-2	Ability to draw different UML diagrams of a given project.
CO-3	Ability to recognize design patterns used in existing systems.
CO-4	Ability to formulate or identify a pattern that suits for a given problem.
CO-5	Ability to understand the related patterns

#### Course-4

Course Code:	A1CIT316
Course Title:	Data Science & Analytics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Student will be able to know the importance of Hadoop.
CO-2	Shall understand the importance of Hadoop distributed file system and apply knowledge in developing map reduce programs
CO-3	Understand the insights of Map-Reduce Jobs

CO-4	Shall gain knowledge to set-up a hadoop cluster
CO-5	Shall gain knowledge in managing unstructured data using PIG
CO-6	Shall gain knowledge in HBASE which is an open-source, non-relational, distributed database and ZOOKEEPER A distributed hierarchical key-value store, which is used to provide a distributed configuration service, synchronization service, and naming registry for large distributed systems

#### Course-5

Course Code:	A1CIT332
Course Title:	Service Oriented Architecture
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understand functions of Service Oriented Architecture and identify the ways in which they can benefit organizations and study the comparison of web services with other technologies. (Knowledge Outcome)
CO-2	Understand the design of SOA, Major components of the architecture SOAP, XML, HTTP, WSDL, XML schema, UDDI and Interactions between various components. (Knowledge Outcome)
CO-3	Learn some of Semantic Web technologies and applications with knowledge of XML's, Grammar rules, namespace schema. (Knowledge Outcome)
CO-4	Create web services and web services clients with state-of-the-art tools along (Understanding Outcome)
CO-5	Understand the web service interoperability, security, and future of web services with the implementation of cloud computing (Understanding Outcome)
CO-6	Use Webservices to interoperate two systems. (Applying)

#### Course-6

Course Code:	A1CIT325
Course Title:	Firewalls & VPN
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify the threats posed to information and network security, as well as the common attacks associated with those threats
CO-2	Aware of Industry Security standards, policies and practices
CO-3	Learn types of firewalls, their limitation, and designing of packet filtering firewall rules
CO-4	Understanding proxy servers and configuring advanced firewall functions
CO-5	Knowledge of VPNs and their tunneling protocols
CO-6	Implementation IPsec in Remote Access VPN

#### Course-7

Course Code:	A1CIT315
Course Title:	Neural Networks & Soft Computing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Identify and describe soft computing techniques and their roles in building intelligent machines.
CO-2	Recognize the feasibility of applying a soft computing methodology for a particular problem.
CO-3	Apply fuzzy logic and reasoning to handle uncertainty and solve engineering problems.

#### Course-8

Course Code:	A1CIT311
Course Title:	Dataware Housing & Data Mining
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	

CO-1	Have the ability to describe key areas such as OLAP (that stands for On Line Analytical Processing) Design, Data Warehousing (DW) and Data Mining (DM) and various tasks in Data preprocessing.
CO-2	Have the ability to provide an overview of most common tasks and application areas of data warehousing, mining frequent patterns and association.
CO-3	Have the ability to provide an overview of classification and cluster analysis
CO-4	Grasp the idea and implementation of most common techniques used in Data mining and Warehousing
CO-5	Grasp the necessity for building and evaluating predictive and descriptive models.
CO-6	Fully appreciate the necessary background and skills to turn available data into valuable and useful information.

#### Course-9

Course Code:	A1CIL207
Course Title:	Design & Analysis of Algorithms Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will be able to understand the data structures and analyse the complexities (efficiency) of algorithms using asymptotic analysis.
CO-2	Students will be able to describe the various algorithms(divide & conquer, dynamic , greedy) and explain in which algorithmic design is suitable for what type of problem.
CO-3	Explain the major graph algorithms and their analyses. Employ graphs to model engineering problems when appropriate. Synthesize new graph algorithms and analyse them
CO-4	Explain different ways to analyse randomized algorithms. Explain between a randomized algorithm and an algorithm with probabilistic inputs.
CO-5	Analyse randomized algorithms. Employ indicator random variables and linearity of expectation to perform the analyses. Recite analyses of algorithms that employ this method of analysis

#### Course-10

Course Code:	A1CIL208
Course Title:	Software Engineering Lab (Project Oriented)
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Student should be able to take a general project idea, elicit detailed requirements by talking with the client and formalize requirements of the project.
CO-2	Student should be able to do feasibility studies on the project and come up with effort estimate for the project.
CO-3	Student should be able to design and implement the project using 3-tier architecture using technologies of his choice.
CO-4	Student should be able to design functional test cases and test the developed software using those test cases.
CO-5	Student should be able to deploy the project and develop a rudimentary user manual that can be referred to by the users while using the software.
CO-6	Students should be able to appreciate the entire software engineering process and the alternative development life-cycles and understand the suitability and pros and cons of each of them in a given context.

#### Course-11

Course Code:	A1ACA507
Course Title:	Entrepreneurship Development
Theory / Lab:	Theory
L-T-P-C:	2-0-0-0
Course Outcomes:	
CO-1	Demonstrate the ability to provide a self-analysis in the context of an Entrepreneurial Career.

CO-2	Demonstrate the ability to find an attractive market that can be reached Economically
CO-3	It helps the students in creating an Appropriate Business-Model for their innovations

### Semester-VII Courses

#### Course-1

Course Code:	A1CIT218
Course Title:	Design of UNIX Operating System
Theory / Lab:	Theory
L-T-P-C:	4-0-0-4
Course Outcomes:	
CO-1	Students will have the ability to understand structure and services of operating system (Kernel) and the design followed to provide kernel services like buffer cache, internal representation of files.
CO-2	Students will have the ability to understand the layout of system memory and the processes functionality and their life cycle.
CO-3	Students will have the ability to understand the significance of drivers, interfaces and streams.
CO-4	Students will grasp the significance of structured system, kernel design construct, buffers and organized file system storage and its implementation.
CO-5	Students will grasp the significance of work done by operating systems by using processes workflow design.
CO-6	Students will fully appreciate the art of operating system design and development for providing services by abstracting the core functionality to users.

#### Course-2

Course Code:	
Course Title:	MOOCs
Theory / Lab:	
L-T-P-C:	
Course Outcomes:	
CO-1	Student shall have gain knowledge in new or advanced courses from NPTEL platform.
CO-2	Student will have flexibility for choose any course of his interest which are not included in curriculum

#### Course-3

Course Code:	A1CIT326
Course Title:	Penetration Testing
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Skills student will develop in this course Students will learn how to apply knowledge of engineering to security evaluation, design and conduct security assessment experiments
CO-2	Analyze and interpret the resulting data, understand professional and ethical responsibility, communicate effectively, understand the impact of security practices in a global and societal context
CO-3	Recognize the need for life-long learning in the quickly changing cybersecurity environment, develop knowledge of contemporary cybersecurity issues
CO-4	Use techniques, skills and modern engineering tools necessary for computer security engineering practice.

#### Course-4

Course Code:	A1CIT348
Course Title:	Image Processing & Pattern Recognition
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Understanding of digital image processing fundamentals, hardware & software digitization, enhancement and restoration , encoding, segmentation and feature detection

CO-2	Ability to apply image processing techniques in both the spatial and frequency (Fourier) domains
CO-3	Ability to Understand how digital images are represented, manipulated, encoded and processed , with emphasis on algorithm design , implementation and performance evaluation
CO-4	Students will able to explain and compare a variety of pattern classification, structural pattern recognition, and pattern classifier combination techniques.

#### Course-5

Course Code:	A1CIT317
Course Title:	Social Network Analysis
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Have the ability to visualize, summarize and compare networks
CO-2	Understand basic principles behind network analysis algorithms
CO-3	Develop practical skills of social network analysis
CO-4	Be capable of analyzing real world social networks

#### Course-6

Course Code:	A1CIT347
Course Title:	Cryptography & Information Security
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	be able to individually reason about software security problems and protection techniques on both an abstract and a more technically advanced level.
CO-2	be able to individually explain how software exploitation techniques, used by adversaries, function and how to protect against them.

#### Course-7

Course Code:	A1CIT327
Course Title:	Information Security & Management Standards
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Learner will have sufficient knowledge about Information assurance and security policies.
CO-2	Learner will have sufficient insight on risk management and change management.
CO-3	Learner will have sufficient knowledge on disaster recovery and physical security.
CO-4	Learner will gain an understanding about influences on information security management and their implications.
CO-5	Learner will have a significant understanding on vulnerabilities, personnel and physical security policies.
CO-6	Learner will appreciate the alignment of information assurance policies with business process.

#### Course-8

Course Code:	A1CIT341
Course Title:	Bio-Informatics
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	The Students will be able to describe the contents and properties of the most important bioinformatics databases, perform text- and sequence- based searches, and analyze and discuss the results in light of molecular biological knowledge.
CO-2	The Students will be able to explain the major steps in pairwise and multiple sequence alignment, explain the principle for, and execute pairwise sequence alignment by dynamic programming.
CO-3	The Students will be able to predict the secondary and tertiary structures of protein sequences.

**Course-9**

Course Code:	A1CIT337
Course Title:	Human Computer Interaction
Theory / Lab:	Theory
L-T-P-C:	3-0-0-3
Course Outcomes:	
CO-1	Explain the capabilities of both humans and computers from the viewpoint of human information processing.
CO-2	Describe typical human-computer interaction (HCI) models, styles, and various historic HCI paradigms.
CO-3	Apply an interactive design process and universal design principles to designing HCI systems.
CO-4	Describe and use HCI design principles, standards and guidelines.
CO-5	Analyze and identify user models, user support, socio-organizational issues, and stakeholder requirements of HCI systems.
CO-6	Discuss tasks and dialogs of relevant HCI systems based on task analysis and dialog design.

**Course-10**

Course Code:	A1CIL209
Course Title:	Object Oriented Analysis and Design & Design Patterns Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Understand Object Oriented Software Development Process
CO-2	Gain exposure to Object Oriented Methodologies & UML Diagrams
CO-3	To apply Object Oriented Analysis Processes for projects

**Course-11**

Course Code:	A1CIL210
Course Title:	Operating Systems Lab
Theory / Lab:	Lab
L-T-P-C:	0-0-3-2
Course Outcomes:	
CO-1	Students will have the ability to simulate the functionalities of operating system.
CO-2	Students will grasp the significance of kernel functionality.
CO-3	Students will fully appreciate the design of operating system.

**Course-12**

Course Code:	A1ACA509
Course Title:	Professional Ethics & IPR
Theory / Lab:	Theory
L-T-P-C:	2-0-0-0
Course Outcomes:	
CO-1	The students will understand the basic perception of profession, professional ethics, various moral & social issues, industrial standards, code of ethics and role of professional ethics in engineering field.
CO-2	The students will aware of professional rights and responsibilities of an engineer, responsibilities of an engineer for safety and risk benefit analysis.
CO-3	The students will acquire knowledge about various roles of engineers in variety of global issues and able to apply ethical principles to resolve situations that arise in their professional lives.

**Semester-VIII Courses****Course-1**

Course Code:	A1CIP601
Course Title:	Directed Study
Theory / Lab:	Theory
L-T-P-C:	0-0-0-2
Course Outcomes:	
CO-1	Student will gain knowledge on tools that are useful for completing the major project.
CO-2	Demonstrate a sound technical knowledge of the advanced concepts required for selected project topic
CO-3	Conduct an engineering project that fulfills the individual's/industrial needs

#### Course-2

Course Code:	A1CIP602
Course Title:	Project
Theory / Lab:	Theory
L-T-P-C:	0-0-0-8
Course Outcomes:	
CO-1	Demonstrate a sound technical knowledge of their selected project topic
CO-2	Undertake problem identification, formulation and solution by considering ethical responsibility
CO-3	Design engineering solutions to complex problems utilizing as system approach
CO-4	Conduct an engineering project that has environmental impact
CO-5	Communicate with engineers and the community at large in written and oral forms
CO-6	Demonstrate the knowledge, skills and attitudes of a professional engineer

#### Course-3

Course Code:	A1ACA501
Course Title:	NSS
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	Will gain an ability to understand themselves in relation to their community
CO-2	Will exhibit capabilities to identify the needs and problems of the community and involve them in problem solving process
CO-3	Will be able to develop among themselves a sense of social and civic responsibility.

#### Course-4

Course Code:	A1ACA502
Course Title:	NCC
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	Will Demonstrate several valuable things such as selflessness, honesty, discipline, hard work and ways to build confidence and gain leadership qualities.
CO-2	Will gain ability to use their social skills and their senses to get to know new places and adapt to the varying environment and also get to learn about the history and art of the new place.
CO-3	Will gear towards joining the forces and providing their 100% when the country is in need of them.

#### Course-5

Course Code:	A1ACA503
Course Title:	Sports
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	

CO-1	Demonstrate the skills necessary to participate, perform, and progress in a variety of sport and/or exercise classes.
CO-2	Apply the cognitive and/or movement experiences from the Physical Education curriculum in order to participate in lifelong fitness.
CO-3	Identify and explain the rules, concepts and vocabulary used in the Physical Education curriculum.

#### Course-6

Course Code:	A1ACA504
Course Title:	Cultural
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	Student shall gain knowledge to identify the fundamental aspects of the music/dance he/she chooses
CO-2	Student will be able to perform/present the basic topics in classical music/dance.
CO-3	Student shall gain hands-on/vocal/dance knowledge and practice.

#### Course-7

Course Code:	A1ACA505
Course Title:	Yoga
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	Improve physical conditioning related to flexibility through participation in Hatha yoga
CO-2	Develop and maintain a personal yoga practice.

#### Course-8

Course Code:	A1ACA507
Course Title:	Entrepreneur Development
Theory / Lab:	Theory
L-T-P-C:	0-0-0-0
Course Outcomes:	
CO-1	demonstrate the ability to communicate effectively both orally and in writing.
CO-2	demonstrate knowledge of the legal and ethical environment impacting business organizations and exhibit an understanding and appreciation of the ethical implications of decisions.
CO-3	demonstrate an ability to engage in critical thinking by analyzing situations and constructing and selecting viable solutions to solve problems.
CO-4	demonstrate an ability to work effectively with others.
CO-5	demonstrate an understanding of and appreciation for the importance of the impact of globalization and diversity in modern organizations.
CO-6	demonstrate knowledge of current information, theories and models, and techniques and practices in all of the major business disciplines including the general areas of Accounting and Finance, Information Technologies, Management, Marketing, and Quantitative Analysis.

# Dept. of MBA

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**MAHARAJ VIJAYARAM GAPATHI RAJ COLLEGE OF ENGINEERING(AUTONOMOUS)**

Vijayaram Nagar Campus, Chintalavalasa, Vizianagaram-535005, Andhra Pradesh

Accredited by NAAC with 'A' Grade & Listed u/s 2(f) & 12(B) of UGC

(Approved by AICTE, New Delhi and Permanently Affiliated by JNTUK-Kakinada)

NBA Accredited UG Courses: B.Tech(MEC), B.Tech(CIV), B.Tech(EEE), B.Tech(ECE), B.Tech(CSE), B.Tech(IT),  
B.Tech(MEC) & B.Tech(CHE) and PG Course: MBA

Course outcomes (Cos) of all courses of all programs offered by the institution

**1. First for B.Tech. Program then for M.Tech.**

**MBA**

**Semester-I Courses**

<b>Course-1</b>	
Course Code:	<b>A1MBT001</b>
Course Title:	<b>PERSPECTIVES OF MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understand the concepts and principles of management
CO-2	Be knowledgeable of the functions as well as skills of successful management.
CO-3	Understand theoretical aspects and its application to practice through case discussions.
CO-4	Demonstrate critical thinking when presented in the management issues/problems

<b>Course-2</b>	
Course Code:	<b>A1MBT002</b>
Course Title:	<b>BUSINESS ENVIRONMENT AND LAW</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student will be familiarized with the influence of micro and macro environmental forces on business.
CO-2	Student will have some overall knowledge of Indian economy
CO-3	Student will get a deeper understanding on the influence various policies on business environment.
CO-4	Student will understand the challenges, mechanisms and regulatory framework of international business environment

<b>Course-3</b>	
Course Code:	<b>A1MBT003</b>
Course Title:	<b>ECONOMICS FOR MANAGERS</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students understand how market forces affect price, quantity and Demand & supply analysis.
CO-2	Students understand elasticity and its relationship to pricing and revenue.
CO-3	Students can utilize statistical analysis to assess product demand conditions and they can estimate a demand function and techniques for demand forecasting..
CO-4	Students can understand different cost concepts , cost analysis for improving their decision making skills.

<b>Course-4</b>	
Course Code:	<b>A1MBT004</b>
Course Title:	<b>ACCOUNTING FOR MANAGERS AND REPORTING</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Use accounting and business terminology, and understand the nature and purpose of generally accepted accounting principles (GAAP).
CO-2	Explain the objective of financial reporting, the elements of the financial statements, and the related key accounting assumptions and principles.
CO-3	Recognize the information conveyed in each of the four basic financial statements and the way it is used by investors, creditors, regulators, and managers

CO-4	Identify the ethical implications inherent in financial reporting and be able to apply strategies for addressing them.
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#### Course-5

Course Code:	<b>AIMBT005</b>
Course Title:	<b>MANAGING PEOPLE</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understanding of the basic concepts of organization behavior.
CO-2	Understanding of different attitudes and perceptions.
CO-3	Better understanding of intrapersonal and interpersonal relations.
CO-4	Clarity for group behavior and dynamics.

#### Course-6

Course Code:	<b>AIMBT006</b>
Course Title:	<b>QUANTITATIVE TECHNIQUES FOR MANAGERS</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Students are aware of the concepts of probability & Distribution.
CO-2	Understand the usage of various statistical methods in business management.
CO-3	Aware of decision theory, time series and index numbers and their significance in decision making.
CO-4	Aware of methods of statistical Quality Control.

#### Course-7

Course Code:	<b>AIMBL001</b>
Course Title:	<b>BUSINESS COMMUNICATION- LAB</b>
Theory / Lab:	Lab
L-T-P-C:	2-0-2-2
Course Outcomes:	
CO-1	Aware of communication process and understand the essentials of good communication.
CO-2	Knowledge of different types of communication.
CO-3	Learn effective good written and oral communication.
CO-4	Understand essentials of effective business correspondence.

### Semester-II Courses

#### Course-1

Course Code:	<b>AIMBT101</b>
Course Title:	<b>FINANCIAL MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The student will be able to understand scope and objectives of corporate finance.
CO-2	The student will able to understand how to borrow money and how to invest money.
CO-3	The student will able to understand the concept of value of the firms.
CO-4	The student will be able to understand the timing and importance in financial planning.
CO-5	The student will be able to understand the working capital concepts and estimations.

#### Course-2

Course Code:	<b>AIMBT102</b>
Course Title:	<b>HUMAN RESOURCE MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Synthesize the role of human resources management as it supports the success of the organization including the effective development of human capital as an agent for organizational change.

CO-2	Synthesize the role of human resources management as it supports the success of the organization including the effective development of human capital as an agent for organizational change.
CO-3	Understand the role of employee benefits and compensation as a critical component of employee performance, productivity and organizational effectiveness.
CO-4	Demonstrate knowledge of practical application of training and employee development as it impacts organizational strategy and competitive advantage.

#### Course-3

Course Code:	<b>A1MBT103</b>
Course Title:	<b>MARKETING MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Compile relevant information from the marketing intelligence available in the market
CO-2	Analyze markets based on various segments
CO-3	Create a point of difference to various products
CO-4	Formulate pricing strategies by considering various factors affecting the price of the product.
CO-5	Incorporate ethical considerations while taking marketing decisions

#### Course-4

Course Code:	<b>A1MBT104</b>
Course Title:	<b>BUSINESS RESEARCH METHODS</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Define a research problem and conduct a literature review
CO-2	Outline the principles of hypothesis testing and identify appropriate analytical strategies to test specific hypotheses.
CO-3	Evaluate the relative strengths and weaknesses of qualitative and quantitative research methods.
CO-4	Develop, present and defend a research proposal as a possible basis for their dissertation project.
CO-5	Outline major ethical issues involved in research.
CO-6	Report and communicate analytical findings and recommendations in a manner conducive to the profession or discipline.

#### Course-5

Course Code:	<b>A1MBT105</b>
Course Title:	<b>CORPORATE SOCIAL RESPONSIBILITY AND GOVERNANCE</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The student learns the important of ethics in an perspectives of all human endeavor.
CO-2	The student gets familiarity about the theory & practices of BE in an organization.
CO-3	The student understands CSR.
CO-4	The student get working knowledge CG in an organization.

#### Course-6

Course Code:	<b>A1MBT106</b>
Course Title:	<b>PRODUCTION AND OPERATIONS MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understand and apply concepts and applications of quantitative and qualitative models in Operations Management.
CO-2	Develop essential skills of modeling, managing and optimizing operations decisions in manufacturing and service organizations.
CO-3	Utilize a variety of quantitative and qualitative methods and tools used in managing and improving operations decisions.
CO-4	Leverage material management knowledge.

CO-5	Use of state-of-the-art distribution practices to implement strategic and operational concepts
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#### Course-7

Course Code:	<b>AIMBL101</b>
Course Title:	<b>IT FOR MANAGERS – LAB</b>
Theory / Lab:	Lab
L-T-P-C:	1-0-3-2
Course Outcomes:	
CO-1	The student will be able to use MS word tool for documentation.
CO-2	The student will be able to apply MS excel for graphs and other calculations.
CO-3	The student will be able to do presentations on power point.
CO-4	The student learns SQL Commands to do MS project.

#### Course-8

Course Code:	<b>A1MBV401</b>
Course Title:	<b>Comprehensive Viva Voce</b>
Theory / Lab:	
L-T-P-C:	0-0-0-1
Course Outcomes:	
CO-1	The students will be able to recall the important concepts in foundation and core mandatory courses.
CO-2	The students will be able to apply concepts learned for solving real time problem scenarios.

### Semester-III Courses

#### Course-1

Course Code:	<b>A1MBT107</b>
Course Title:	<b>ENTREPRENEURSHIP AND MSMEs</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Demonstrate the ability to provide a self-analysis in the context of an Entrepreneurial Career.
CO-2	Demonstrate the ability to find an attractive market that can be reached Economically.
CO-3	It helps the students in creating an Appropriate Business-Model for their innovations.

#### Course-2

Course Code:	<b>A1MBT210</b>
Course Title:	<b>FINANCIAL MARKETS AND SERVICES</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understands the detail structure of Indian Financial System.
CO-2	Acquire knowledge on various financial markets like money, capital, forex& derivatives.
CO-3	Get awareness on different types of financial services.

#### Course-3

Course Code:	<b>A1MBT211</b>
Course Title:	<b>BANKING AND INSURANCE</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understand the structure and regulatory framework of Banks in India including the RBI.
CO-2	Knowledge of Banking operations in general and related to businesses in particular and the role of technology in modern day Banking.
CO-3	Acquaint with the various financing facilities for businesses available with the modern day Banks.
CO-4	Knowledge of Insurance operations/ regulatory framework for Insurance and the role of Insurance for Businesses

**Course-4**

Course Code:	<b>A1MBT213</b>
Course Title:	<b>SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Analyze and evaluate financial markets, how securities are traded, mutual funds, investment companies, and investor behavior.
CO-2	Explain macro and industry analysis, equity valuation, financial statement analysis and technical analysis
CO-3	Analyze bond prices and yields and fixed-income portfolios.
CO-4	Construct optimal portfolios and illustrate the theory and empirical applications of asset pricing models.
CO-5	Characterize the implications of the market efficiency evidence on active portfolio management

**Course-5**

Course Code:	<b>A1MBT202</b>
Course Title:	<b>RETAIL MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The knowledge of retailing is enhanced to make them opt careers in the area of retailing.
CO-2	The concept and meaning of multichannel retailing, types of retailers, customer buying behavior is understood.
CO-3	The importance of retail market strategy, retail location importance, HRM, information, supply chain management and customer relationship management is understood.
CO-4	The knowledge of merchandise planning and assortment, pricing, retail communication mix, store management, store layout design and visual merchandising is developed.

**Course-6**

Course Code:	<b>A1MBT204</b>
Course Title:	<b>CONSUMER BEHAVIOUR AND MARKET RESEARCH</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The students will be able to understand business markets and the related concepts and theories involved in business activities.
CO-2	Student can able to describe the business organization buying behavior with particular emphasis on the globalization of modern business.
CO-3	Student can analyze business situations in the context of buyer-seller relationships, consumer relationship management and supply chain management.
CO-4	CO4 Student can understand consumer perception towards purchasing of various products.

**Course-7**

Course Code:	<b>A1MBT207</b>
Course Title:	<b>LOGISTICS AND SUPPLY CHAIN MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The importance of gaining competitive advantage through logistics management is understood.
CO-2	The critical facets of supply chain management and their inter-relationships is understood.
CO-3	The aspects of sourcing, transportation and pricing decisions are understood.
CO-4	An understanding of global logistics and global supply chains is developed.

**Course-8**

Course Code:	<b>A1MBT222</b>
Course Title:	<b>LABOUR LAWS</b>
Theory / Lab:	Theory

L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The nature and scope of labor laws
CO-2	The rationale of labor laws in organizations
CO-3	The international labor organization visa-viz the labor laws in India and
CO-4	Managing employee relations at work.

#### Course-9

Course Code:	<b>A1MBT220</b>
Course Title:	<b>GLOBAL HUMAN RESOURCE MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Ability to differentiate between HRM and IHRM.
CO-2	Knowledge of the major challenges that MNCs face in the global context and will become acquainted with cultural literacy, international human resource planning, international staffing, international training and development, international compensation, international performance management, international industrial relations, international strategic human resources management.

#### Course-10

Course Code:	<b>A1MBT226</b>
Course Title:	<b>COMPENSATION MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Develop a clear understanding of compensation management in the organisations
CO-2	Demonstrate how the compensation strategy fit together organizational goals
CO-3	Understanding the importance of fringe benefits Awareness of the latest trends in compensation
CO-4	Awareness about the compensation structure and differentials.

### Semester-IV Courses

#### Course-1

Course Code:	<b>A1MBT108</b>
Course Title:	<b>STRATEGIC MANAGEMENT</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	The viewpoints of senior and top management executives with a major focus on the total enterprise as a whole rather than each functional department are understood.
CO-2	The knowledge about the factors that shapes a company's strategy in view of competition is acquired.
CO-3	The students are enabled to acquire an understanding of environmental scanning and leadership.
CO-4	The knowledge of various aspects of strategic management process is developed.

#### Course-2

Course Code:	<b>A1MBT302</b>
Course Title:	<b>CORPORATE VALUATION AND MERGERS</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Understand the dynamics in the process of business restructuring.
CO-2	Value the firms in different methods and models.
CO-3	Comprehend variety of takeover defense strategies.
CO-4	comply with the legal procedures and framework in the process of business integration and disintegration.

#### Course-3

Course Code:	<b>A1MBT304</b>
Course Title:	<b>LEADERSHIP IN ORGANIZATIONS</b>
Theory / Lab:	Theory

L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	Student can learn and understand different types of leadership styles and their traits.
CO-2	The program equips students to select, implement, and manage appropriate leadership methodologies to meet individual, group, and organizational needs.
CO-3	Student will develop a range of leadership skills and abilities such as effectively leading change, resolving conflict, and motivating others.
CO-4	Student can understand various strategic leaders and their styles for developing leadership skills.

#### Course-4

Course Code:	<b>A1MBT305</b>
Course Title:	<b>INTERNET MARKETING</b>
Theory / Lab:	Theory
L-T-P-C:	3-1-0-3
Course Outcomes:	
CO-1	An overall understanding of internet marketing dimensions.
CO-2	Ability to develop strategies to leverage the potential of internet marketing.
CO-3	An ability to develop internet marketing strategies with reference to the digital age.
CO-4	An Understanding of online consumer behavior.

#### Course-5

Course Code:	<b>A1MBP501</b>
Course Title:	<b>Project Report &amp; VIVA-VOCE</b>
Theory / Lab:	Project
L-T-P-C:	0-0-0-6
Course Outcomes:	
CO-1	Demonstrate a sound knowledge of their selected project topic.
CO-2	Undertake real time problems faced by organizations and provide solutions by considering ethical responsibility.
CO-3	Communicate with management of the organization and the community at large in written and oral forms.
CO-4	Demonstrate the knowledge, skills and attitudes of a manager.

2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution

**I B.Tech. (Civil Engineering)**

**Program Outcomes(POs)**

1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems
2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations
4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations
6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions
11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments
12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes(PSOs)**

1	Solve civil engineering problems using analytical methods and modern tools and techniques
2	Plan, design, execute, maintain and rehabilitate civil engineering structures and systems

**II M.Tech. (Structural Engineering)**

**Program Outcomes(POs)**

1	An ability to independently carry out research / investigation and development work to solve practical problems.
2	An ability to use modern engineering tools, software and equipment to analyze critically, design, conduct experiments and interpret investigations to solve structural engineering problems with clear understanding of limitations of such modern tools.
3	An ability to derive information relevant to uncommon problem through literature survey, conduct of suitable experiment, apply pertinent research methodologies, interpret the information and analyze the data for the development of technical expertise in the field of structural engineering.
4	An ability to communicate and function effectively as an individual and as a team, within multi-disciplinary environment in executing and managing projects.
5	An ability to recognize the need for the self-engagement in life-long learning to meet the ever changing, challenging demands of the society with utmost enthusiasm.

**Program Specific Outcomes(PSOs)**

1	To analyze and design structural components & systems using appropriate software, modern tools and standards.
2	Undertake real time projects and research in the field of structural engineering to provide sustainable solutions to the Civil Engineering problems.

2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution

I **B.Tech. (Electrical and Electronics Engg)**

**Program Outcomes(POs)**

1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes(PSOs)**

1	An ability to design & develop models as well as analyze & assess the performance of different types of generation, transmission, distribution and protection mechanisms in core engineering.
2	An ability to devise control strategies and provide optimal solutions for industrial and societal electrical energy requirements

II **M.Tech. (Power Systems)**

**Program Outcomes(POs)**

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12	

**Program Specific Outcomes(POs)**

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4	

## 2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution

### I B.Tech. (Mechanical Engg)

#### Program Outcomes(POs)

1	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

#### Program Specific Outcomes(PSOs)

1	The student will be able to demonstrate the skill set required to suit the requirements of the Industry as well a research environment
2	The student will be able to design experiments, conduct experiment, analyse, comprehend and report based on the knowledge acquired by the experience based learning.

### II M.Tech. (Product Design and Manufacturing)

#### Program Outcomes(POs)

1	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

#### Program Specific Outcomes(PSOs)

1	The student will be able to demonstrate the skill set required to suit the requirements of the Industry as well a research environment
2	The student will be able to design experiments, conduct experiment, analyse, comprehend and report based on the knowledge acquired by the experience based learning.

**2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution**

**I B.Tech. (ECE)**

**Program Ooutcomes(POs)**

1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes(PSOs)**

1	An ability to design and implement complex systems in the areas related to Analog and Digital Electronics, Communication, Signal processing, RF & Microwave, VLSI and Embedded systems.
2	Ability to make use of acquired knowledge to be employable and demonstrate leadership and entrepreneurial skills

**II M.Tech. (VLSI)**

**Program Ooutcomes(POs)**

1	Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Modern tool usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
6	The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice
7	Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development
8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice
9	Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings
10	Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

11	Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### **Program Specific Outcomes(POs)**

1	An ability to design and implement complex systems in the areas related to Analog and Digital Electronics, Communication, Signal processing, RF & Microwave, VLSI and Embedded systems.
2	Ability to make use of acquired knowledge to be employable and demonstrate leadership and entrepreneurial skills

2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution

I **B.Tech. (Computer Science & Engineering)**

**Program Outcomes(POs)**

1	<b>PO1: Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	<b>PO2: Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	<b>PO3: Design/development:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	<b>PO4: Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	<b>PO5: Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	<b>PO6: The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	<b>PO7: Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	<b>PO8: Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	<b>PO9: Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	<b>PO10: Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	<b>PO11: Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	<b>PO12: Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

<b>Program Specific Outcomes(PSOs)</b>	
1	<b>PSO1 (PO1, PO2, PO3, and PO5): Pattern based approach:</b> Apply through knowledge of Programming paradigms, constructs, architectural patterns and algorithmic patterns while coming up with solutions to complex problems that can be deployed in complex usability scenarios.
2	<b>PSO2 (PO3, and PO5): Reusability and Adaptability:</b> Assimilate, fully appreciate, utilize and evangelize component based architecture that would promote reusability, adaptability and extensibility at all levels of solution design for complex problems.
3	<b>PSO3 (PO2, PO3, and PO4): Analysis and Synthesis:</b> Demonstrate ability to both analyze existing systems with a view to understand the solution comprehensively, change/optimize the solution and to synthesize systems based on a new requirements utilizing existing infrastructure including system components that can be reused.

## II M.Tech. (Computer Network & Information Security)

### Program Outcomes(POs)

1	Apply the knowledge of mathematics, science, engineering fundamentals, and engg. specialization to the solution of complex engineering problems.
2	Identify, formulate, research literature, and analyze engineering problems to arrive at substantiated conclusions using first principles of mathematics, natural, and engineering sciences.
3	Design solutions for complex engineering problems and design system components, processes to meet the specifications with consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Use research-based knowledge including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Function effectively as an individual, and as a member or leader in teams, and in multidisciplinary settings.
10	Communicate effectively with the engineering community and with society at large. Be able to comprehend and write effective reports documentation. Make effective presentations, and give and receive clear instructions.
11	Demonstrate knowledge and understanding of engineering and management principles and apply these to one's own work, as a member and leader in a team. Manage projects in multidisciplinary environments.
12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### Program Specific Outcomes(POs)

1	Design, develop and maintain corporate computer networking infrastructure.
2	Demonstrate advanced programming skills, database management, web technologies.
3	Implement multi-layer security at host and campus level, understaing the cyber laws, performing penetration testing, have a detailed understanding of information security management and standards.
4	Demonstrate good communication skills, take up independet project design and development.

2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution

I **B.Tech. (Chemical Engg)**

**Program Outcomes(POs)**

1	<b>Engineering knowledge:</b> Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	<b>Problem analysis:</b> Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	<b>Design/development of solutions:</b> Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	<b>Conduct investigations of complex problems:</b> Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	<b>Modern tool usage:</b> Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	<b>The engineer and society:</b> Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	<b>Environment and sustainability:</b> Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	<b>Ethics:</b> Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	<b>Individual and team work:</b> Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	<b>Communication:</b> Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	<b>Project management and finance:</b> Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	<b>Life-long learning:</b> Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes(PSOs)**

1	<b>PSO1:</b> An ability to solve chemical engineering problems using analytical methods and modern tools and techniques
2	<b>PSO2:</b> An ability to design, operate, maintain and troubleshoot chemical engineering equipments.

**2.6.1.(a) Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institution**

**B.Tech. (Information Technology)**

**Program Outcomes(POs)**

1	Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2	Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3	Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4	Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5	Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6	Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7	Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8	Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9	Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10	Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.
11	Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
12	Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

**Program Specific Outcomes(PSOs)**

1	Apply through knowledge of Programming paradigms, constructs, architectural patterns and algorithmic patterns while coming up with solutions to complex problems that can be deployed in complex usability scenarios.
2	Assimilate, fully appreciate, utilize and evangelize component based architecture that would promote reusability, adaptability and extensibility at all levels of solution design for complex problems.
3	Demonstrate ability to both analyze existing systems with a view to understand the solution comprehensively, change/optimize the solution and to synthesize systems based on a new requirements utilizing existing infrastructure including system components that can be reused.

**2.6.1.(a)** Program outcomes (Pos), program specific outcomes (PSOs) for all programs offered by the institutio  
**MBA**

**Program Ooutcomes(POs)**

1	Apply knowledge of management theories and practices to solve business problems
2	Foster Analytical and critical thinking abilities for data-based decision making
3	Ability to develop Value based Leadership ability
4	Ability to understand, analyze and communicate global, economic, legal, and ethical aspects of business
5	Ability to lead themselves and others in the achievement of organizational goals, contributing effectively to a team environment
6	Generate business ideas, develop business plans, understand regulatory requirements, and locate sources of finance and other resources to start new business ventures